MARICOPA ASSOCIATION of GOVERNMENTS

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SPECIAL NOTICE REGARDING PUBLIC MEETINGS

Due to the risks to public health caused by the possible spread of the COVID-19 virus at public gatherings, the Maricopa Association of Governments has determined that public meetings will be indefinitely held through technological means. Meetings will be open to the public through technological means. In reliance on, and compliance with, the March 13, 2020, Opinion issued by Attorney General Mark Brnovich, the Maricopa Association of Governments provides this special advance notice of the technological means through which public meetings may be accessed. While this special notice is in effect, public comment at meetings will only be accepted through written submissions, which may or may not be read aloud during meetings.

To attend the meeting noticed below by technological means, members of the public may:

1. To watch a live video stream of the meeting, click here to go to MAG's YouTube channel https://www.youtube.com/channel/UCPYm3GwUIqFxbIzTabenoVA.
2. Members of the public may submit written comments relating to this meeting to azmag.gov/comment. Comments may be sent at any time leading up to the meeting, but must be received at least one hour prior to the posted start time for the meeting.

If any member of the public has difficulty connecting to the meeting, please contact MAG at (602) 254-6300 for support.

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October 21, 2021

TO: Members of the MAG Air Quality Technical Advisory Committee

FROM: Megan Sheldon, Glendale, Chair

SUBJECT: MEETING NOTIFICATION OF THE MEETING AND TRANSMITTAL OF TENTATIVE AGENDA

Thursday, October 28, 2021 - 1:30 p.m.
VIRTUAL MEETING

The MAG Air Quality Technical Advisory Committee has been scheduled at the time noted above. The meeting will be **held as a virtual meeting only**, with no in-person attendance options available at this time. Instructions on how to participate will be provided via email to members of the committee. Members of the public will be able to view and listen to the meeting via a live video stream. You can watch the meeting online by clicking here to go to MAG's YouTube channel https://www.youtube.com/channel/UCPYm3GwUIqFxbIzTabenoVA. Public comments can be provided in written format through the MAG website at azmag.gov/comment. If you have questions, please contact the MAG office at (602) 254-6300.

In 1996, the Regional Council approved a simple majority quorum for all MAG advisory committees. If the MAG Air Quality Technical Advisory Committee does not meet the quorum requirement, members who have joined the meeting will be notified that a legal meeting cannot occur and the meeting will end. Your participation in the meeting is strongly encouraged.

Pursuant to Title II of the Americans with Disabilities Act (ADA), MAG does not discriminate on the basis of disability in admissions to or participation in its public meetings. Persons with a disability may request a reasonable accommodation, such as a sign language interpreter, by contacting the MAG office. Requests should be made as early as possible to allow time to arrange the accommodation.

If you have any questions regarding the meeting, please contact MAG at (602) 254-6300.

MAG Air Quality Technical Advisory Committee

TENTATIVE AGENDA

October 28, 2021

1. Call to Order

2. Call to the Audience

An opportunity will be provided to members of the public to provide input through written comment to the Air Quality Technical Advisory Committee on items that are not on the agenda that are within the jurisdiction of MAG, or on items on the agenda for discussion but not for action. Members of the public are asked to submit written comments related to this meeting through the MAG website at azmag.gov/comment, and indicate for which meeting the comment is intended. Comments may be sent at any time leading up to the meeting, but must be received at least one hour prior to the posted start time for the meeting. Comments received prior to the deadline will be read aloud during the meeting. Comments must not exceed three minutes in length. A total of 15 minutes will be provided for the Call to the Audience agenda item, unless the Air Quality Technical Advisory Committee requests an exception to this limit. Please note that comments received for agenda items posted for action will be read at the time the item is heard.

Action Requested:
Information.

3. Approval of the September 23, 2021 Meeting Minutes

Action Requested:
Review and approve the September 23, 2021 meeting minutes.

4. Draft MAG Conformity Analysis for the Draft FY 2022-2025 MAG Transportation Improvement Program and Draft MOMENTUM 2050 MAG Regional Transportation Plan

The Draft MAG Conformity Analysis concludes that the Draft FY 2022-2025 MAG Transportation Improvement Program (TIP) and Draft MOMENTUM 2050 MAG Regional Transportation Plan (RTP) meet all applicable federal conformity requirements and are in conformance with the applicable air quality plans. On September 13, 2021, the Draft TIP, MOMENTUM 2050 RTP, and Conformity Analysis were made available for a 30-day public review period and comments were requested by October 13, 2021. No comments were received on the Draft MAG Conformity Analysis. A copy of the Draft MAG Conformity Analysis Executive Summary is provided with the enclosed material. The Draft MAG Conformity Analysis full document and Appendices are available on the MAG website at azmag.gov/Newsroom/Public-Notices. Please refer to the enclosed material.

Action Requested:
Recommend approval of the Draft MAG Conformity Analysis for the Draft FY 2022-2025 MAG Transportation Improvement Program and Draft MOMENTUM 2050 MAG Regional Transportation Plan.

5. Evaluation of Proposed PM-10 Certified Street Sweeper Projects for FY 2022 CMAQ Funding

An evaluation of proposed PM-10 Certified Street Sweeper Projects for Fiscal Year 2022 Congestion Mitigation and Air Quality Improvement (CMAQ) Funds has been conducted. The deadline for submitting projects was September 17, 2021.

The FY 2020-2024 MAG Transportation Improvement Program contains $1,268,705 in FY 2022 CMAQ funding to encourage the purchase and utilization of PM-10 certified street sweepers. A minimum local cash match of 5.7 percent is required.

Fourteen projects requesting $3.86 million in federal funds were evaluated. The MAG Air Quality Technical Advisory Committee is requested to recommend a prioritized list of proposed PM-10 Certified Street Sweeper Projects for FY 2022 CMAQ funding to the MAG Management Committee and to retain the prioritized list for any additional FY 2022 CMAQ funds that may become available due to closeout or additional funding received by this region. Please refer to the enclosed material.

Action Requested:
Information, discussion, and recommendation of a prioritized list of proposed PM-10 Certified Street Sweeper Projects for FY 2022 CMAQ funding to the MAG Management Committee and to retain the prioritized list for any additional FY 2022 CMAQ funds that may become available due to closeout or additional funding received by this region.

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6. Evaluation of Proposed PM-10 Paving Unpaved Road Projects for FY 2025 CMAQ Funding

An evaluation of proposed PM-10 Paving Unpaved Road Projects for Fiscal Year 2025 Congestion Mitigation and Air Quality Improvement (CMAQ) Funds has been conducted. The deadline for submitting projects was September 17, 2021. In total, five PM-10 paving of unpaved road project applications were received from member agencies in the Maricopa County and Pinal County PM-10 and PM-2.5 nonattainment areas requesting $5.52 million in CMAQ funding. A combined $5,774,233 in FY 2025 CMAQ funding is available. The MAG Air Quality Technical Advisory Committee is requested to rank the Paving Unpaved Road Projects and forward to the Transportation Review Committee. Please refer to the enclosed material.

Action Requested:
Information, discussion, and recommendation to rank the Proposed PM-10 Paving Unpaved Road Projects for FY 2025 CMAQ funding and forward to the MAG Transportation Review Committee.

7. Evaluation of Proposed CMAQ Projects for the Draft FY 2022-2025 MAG Transportation Improvement Program

An evaluation of proposed Congestion Mitigation and Air Quality Improvement (CMAQ) projects for the Draft FY 2022-2025 MAG Transportation Improvement Program (TIP) has been conducted. The deadline for submitting projects was September 17, 2021.

The evaluation includes the estimated emissions reduction and cost-effectiveness information for proposed Bicycle and Pedestrian projects for FY 2025 and Transportation Systems Management and Operations projects for FY 2023 and FY 2024. Please refer to the enclosed material.

Action Requested:
Information, discussion, and recommendation to forward the evaluation of proposed CMAQ projects for the Draft FY 2022-2025 MAG Transportation Improvement Program to the MAG Transportation Review Committee and modal committees for use in prioritizing projects.

8. Update on the 2022 Serious Area Particulate Plan for the West Pinal County Nonattainment Area

In accordance with the Clean Air Act, a Serious Area Particulate Plan for PM-10 for the West Pinal County Nonattainment Area is required to be submitted to EPA by January 24, 2022. Commitments to implement Best Available Control Measures and Most Stringent Measures for the reduction of PM-10 within the nonattainment area were made by the Governor's Agricultural Best Management Practices Committee on July 28, 2021 and the Pinal County Board of Supervisors on August 4, 2021. The committed control measures are being evaluated to determine their impact towards attaining the PM-10 standard.

Additional information has been received for the PM-10 emission inventories and the design days from the Arizona Department of Environmental Quality and the Pinal County Air Quality Control District. Design days for modeling attainment of the PM-10 standard have been identified and selected. PM-10 emission inventories for the selected design days are being developed with

inputs from the Arizona Department of Environmental Quality, Pinal County Air Quality Control District, and MAG. In addition, EPA has provided initial feedback on the design day selection. A draft modeling protocol has been prepared. MAG has contracted with Trinity Consultants to perform and assist in the air quality modeling for the required attainment demonstration of the PM-10 standard in the nonattainment area. Work continues to determine the appropriate and most expeditious extension of the attainment date, demonstration of reasonable further progress and associated milestones, and the identification of contingency measures. An update will be provided.

Action Requested:
Information and discussion.

9. Request for Future Agenda Items

Topics or issues of interest that the Air Quality Technical Advisory Committee would like to have considered for discussion at a future meeting will be requested. Please note that the next meeting of the Committee has been tentatively scheduled for **Thursday, December 16, 2021**, rather than December 2, 2021.

Action Requested:
Information.

Adjournment

MINUTES OF THE
MARICOPA ASSOCIATION OF GOVERNMENTS
AIR QUALITY TECHNICAL ADVISORY COMMITTEE MEETING

Thursday, September 23, 2021
Web Conference
Phoenix, Arizona

MEMBERS ATTENDING

Megan Sheldon, Glendale, Chair
Ramona Simpson, Queen Creek, Vice Chair
Danae Presler, Avondale
Robert van den Akker, Buckeye
Stefanie Garcia for Jon Sherrill, Chandler
Derek Castaneda, El Mirage
* Benjamin Bitter, Florence
# Hondo Judd, Gilbert
# Mario Saldamando, Goodyear
* Corin Hooper, Maricopa
* Aaron Chavez, Mesa
# Rhonda Humbles, Peoria
# Matthew Potzler for Nancy Allen, Phoenix
# Scott DiBiase, Pinal County
# Mangus Slinkey for Stan Belone, Salt River Pima-Maricopa Indian Community
# Tim Conner, Scottsdale
# Martin Lucero, Surprise
# John Woods for Christina Hoppes, Tempe
* Vacant, Youngtown
* Walter Bouchard, American Lung Association of Arizona
# Kristen Watt, Salt River Project
# Michelle Kamikawa, Southwest Gas Corporation
# Michael Denby, Arizona Public Service
# Susie Stevens, Western States Petroleum Association
* Robert Forrest, Valley Metro/RPTA
* Dave Berry, Arizona Motor Transport Association
# Liz Foster, Maricopa County Farm Bureau
* Steve Trussell, Arizona Rock Products
* Vacant, Greater Phoenix Chamber of Commerce
# Amanda McGennis, Associated General Contractors
* Spencer Kamps, Homebuilders Association of Central Arizona
* Vacant, Arizona Forward
# Kai Umeda, University of Arizona Cooperative Extension
# Beverly Chenausky, Arizona Department of Transportation
* Joseph Martini, Arizona Department of Environmental Quality
* Vacant, Environmental Protection Agency
# Kimberly Butler, Maricopa County Air Quality Department
# Michelle Wilson, Arizona Department of Agriculture, Weights and Measures
# @ Ed Stillings, Federal Highway Administration
# JC Porter, Arizona State University

* Members neither present nor represented by proxy.
# Participated via telephone conference call.
+ Participated via video conference call.
@ Ex-Officio member, non-voting member.

OTHERS PRESENT

Lindy Bauer, MAG
Julie Hoffman, MAG
Matt Poppen, MAG
Taejoo Shin, MAG
Randy Sedlacek, MAG
Lesa Young, MAG
Lillian Duarte, Valley Metro

1. Call to Order

A meeting of the Maricopa Association of Governments (MAG) Air Quality Technical Advisory Committee (AQTAC) was conducted on September 23, 2021. Megan Sheldon, City of Glendale, Chair, called the meeting to order at approximately 1:30 p.m.

2. Call to the Audience

Chair Sheldon stated that the Call to the Audience provides an opportunity to members of the public to provide input through written comment to the Air Quality Technical Advisory Committee on items that are not on the agenda that are within the jurisdiction of MAG, or on items on the agenda for discussion but not for action. Members of the public are asked to submit written comments related to this meeting through the MAG website at azmag.gov/comment, and indicate for which meeting the comment is intended. Comments may be sent at any time leading up to the meeting, but must be received at least one hour prior to the posted start time for the meeting. Comments received prior to the deadline will be read aloud during the meeting. Comments must not exceed three minutes in length. A total of 15 minutes will be provided for the Call to the Audience agenda item, unless the Air Quality Technical Advisory Committee requests an exception to this limit. Please note that comments received for agenda items posted for action will be read at the time the item is heard. No public comments were received for the September 23, 2021 MAG Air Quality Technical Advisory Committee meeting.

3. Approval of the August 26, 2021 Meeting Minutes

The Committee reviewed the minutes from the August 26, 2021 meeting. Stefanie Garcia, City of Chandler, moved to approve the August 26, 2021 meeting minutes. Liz Foster, Maricopa County Farm Bureau, seconded, and the motion passed with Matthew Potzler, City of Phoenix, Derek Castaneda, City of El Mirage, Beverly Chenausky, Arizona Department of Transportation, Tim Connor, City of Scottsdale, Michael Denby, Arizona Public Service, Scott DiBiase, Pinal County, Ms. Foster, John Woods, City of Tempe, Rhonda Humbles, City of Peoria, Hondo Judd, Town of Gilbert, Martin Lucero, City of Surprise, Danae Presler, City of Avondale, Mario Saldamando, City of Goodyear, Chair Sheldon, Ms. Garcia, Ramona Simpson, Town of Queen Creek, Kai Umeda, University of Arizona Cooperative Extension, Robert van den Akker, City of Buckeye, and Kristin Watt, Salt River Project, voting in favor of the motion. Amanda McGennis, Arizona Chapter, Associated General Contractors, JC Porter, Arizona State University, and Susie Stevens, Western States Petroleum Association, abstained from the vote. Mangus Slinkey, Salt River Pima-Maricopa Indian Community, Kim Butler, Maricopa County Air Quality Department, Michelle Kamikawa, Southwest Gas, and Michelle Wilson, Arizona Department of Agriculture, Weights, and Measures, were not present for the vote.

4. Update on the 2022 Serious Area Particulate Plan for the West Pinal County Nonattainment Area

Matt Poppen, Maricopa Association of Governments, gave an update on the 2022 Serious Area Particulate Plan for the West Pinal County Nonattainment Area. Mr. Poppen stated that the Environmental Protection Agency (EPA) initially designated the West Pinal PM-10 Nonattainment Area as a Moderate Area effective July 2, 2012. In response to that designation, the Arizona Department of Environment Quality (ADEQ) prepared the 2015 West Pinal Moderate PM-10 Nonattainment Area State Implementation Plan (SIP) and submitted it to EPA on December 21, 2015. The attainment date for the Moderate Area was December 31, 2018. On June 24, 2020, EPA published a final rule stating that the nonattainment area failed to meet the PM-10 standard by the December 31, 2018 attainment date and is reclassified as a Serious Area. The effective date of the final rule was July 24, 2020. A Serious Area PM-10 Plan is required to be submitted to EPA within 18 months of the reclassification date, which is January 24, 2022.

Mr. Poppen noted that additional regulatory actions occurred on January 8, 2021, where EPA published a proposed rule to approve in part and disapprove in part the 2015 West Pinal Moderate PM-10 Nonattainment Area SIP prepared and submitted by ADEQ. On February 26, 2021, EPA published a limited approval and limited disapproval of a revision to the SIP regarding agricultural best management practices designed to address the Moderate nonattainment area requirements in the West Pinal County PM-10 nonattainment area. In response to these actions, ADEQ withdrew the 2015 West Pinal Moderate PM-10 Nonattainment Area SIP on May 17, 2021.

Mr. Poppen indicated that on July 23, 2021, EPA published a finding of failure to submit a state implementation plan to meet the Moderate area requirements for the West Pinal County PM-10 nonattainment area effective August 23, 2021. With this final failure to submit notice, the imposition of emissions offset sanctions will apply beginning February 23, 2023, if the State does not submit a complete Moderate Area Plan. Two years after the effective date on August 23, 2023, imposition of highway sanctions would apply if the State does not submit a complete Moderate Area Plan. He mentioned that within two years of the effective date, EPA could promulgate a Federal Implementation Plan (FIP) if EPA does not approve the State's Moderate Area Plan submission. To avoid these things from occurring, EPA has also indicated that a submission of a complete Serious Area PM-10 Plan that addresses all of the Moderate area requirements will turn off the sanctions clocks for the emissions offset sanctions and the highway sanctions. If EPA approves a complete Serious Area PM-10 Plan that addresses all Moderate area requirements, it will stop the promulgation of a FIP.

Mr. Poppen discussed the base year annual emissions inventory and noted that EPA recommended selecting a base year between 2016 and 2018 for the base year emissions inventory for the Serious Area PM-10 Plan. The year 2017 was selected as the base year. The base year inventory includes only direct emissions of PM-10. He added that MAG has

prepared a weight of evidence analysis that PM-10 precursor pollutants (ammonia, nitrogen oxides, sulfur dioxide, and volatile organic compounds) do not significantly contribute to exceedances of the PM-10 standard in the West Pinal County PM-10 nonattainment area and are therefore not included in the 2017 base year inventory. The draft 2017 base year emissions inventory has been developed with inputs by ADEQ, Pinal County Air Quality Control District, and MAG.

Mr. Poppen stated that since the last Air Quality Technical Advisory Committee meeting on August 26, 2021, MAG has received new inputs for the base year emissions inventory including: 1) New estimates of the percentage of agricultural cropland that is considered to be fallow in the nonattainment area; 2) Additional information was received on completed paving projects of unpaved roads in the nonattainment area; and 3) MAG received refined estimates of the amount of average daily traffic on paved and unpaved roads in the nonattainment area. He indicated that the 2017 base year annual emissions inventory has been updated to reflect the new inputs. Mr. Poppen provided a pie chart that represented the draft 2017 base year inventory of PM-10 emissions in the West Pinal County nonattainment area. He reviewed the source categories' percentage of annual emissions and noted that the overall tons for the year was 38,218 tons per year within the nonattainment area.

Mr. Poppen stated that MAG has contracted with Trinity Consultants to perform and assist in the air quality modeling for the required attainment demonstration of the PM-10 standard in the nonattainment area. A draft modeling protocol that describes the methods and assumptions used to model attainment in the PM-10 nonattainment area has been prepared by Trinity Consultants and MAG. The draft modeling protocol was submitted to EPA for review on September 15, 2021. The modeling protocol recommends the use of the AERMOD modeling system developed by the American Meteorological Society/Environmental Protection Agency Regulatory Model Improvement Committee to model PM-10 concentrations during stagnant, low wind hours. During elevated wind hours, the protocol recommends the use of a distance-weighted rollback technique. Commitments to implement 61 of the 70 measures on the Suggested List of PM-10 Emission Reduction Measures have been received from the Pinal County Board of Supervisors and the Governor's Agricultural Best Management Practices Committee. Under the modeling protocol, the calculated emission reductions from these committed measures will be modeled using both AERMOD and rollback as appropriate to demonstrate attainment of the PM-10 standard.

Mr. Poppen discussed the AERMOD modeling system and stated that AERMOD is a dispersion model that has been widely used to quantify the relationship between directly emitted air pollutants (PM-10 emissions) and air quality (PM-10 concentrations) under different meteorological conditions. Within the AERMOD modeling system, there are modules or processors that account for the effects of meteorology and the effects of the surface terrain on PM-10 concentrations. Since AERMOD has historically had poor performance in replicating PM-10 concentrations due to windblown dust from fugitive dust

sources, AERMOD will not be used to predict PM-10 concentrations from windblown dust during elevated wind hours that are above 12 miles per hour. Because low wind, activity-based emissions still occur during elevated wind hours, AERMOD will continue to be used to estimate PM-10 concentrations from activity-based (non-windblown dust) emission sources during elevated wind hours.

Regarding rollback modeling, Mr. Poppen stated that it is a more simple model that assumes there is a linear relationship between PM-10 source emissions and their contribution to PM-10 concentrations at a monitor (e.g., a five percent reduction in PM-10 emissions will result in a five percent reduction in PM-10 concentrations). He mentioned that EPA allows the use of rollback when other modeling methods (e.g., dispersion modeling) "may not be suitable to appropriately address the nature of ambient PM-10". Additionally, EPA has approved the use of rollback in both Maricopa County (MAG 2012 Five Percent Plan) and Clark County, Nevada (2001 PM-10 attainment plan and 2012 maintenance plan). Mr. Poppen noted that during elevated wind hours in the West Pinal County nonattainment area, the majority of the recorded PM-10 concentrations are from windblown dust from fugitive dust sources. For these hours, it is logical to assume that the percentage reduction in windblown dust from implementation of committed controls will result in a similar percentage reduction in PM-10 concentrations that can then be modeled through the rollback technique. The modeling protocol also proposes to weight the PM-10 emissions from windblown dust by distance from the monitor (i.e., windblown dust emission sources closest to the monitor contribute more to PM-10 concentrations than sources located further away).

Mr. Poppen indicated that in addition to the two modeling techniques, it is important to understand background concentrations within the nonattainment area. He noted that the modeling protocol establishes proposed background PM-10 concentrations during low wind and elevated wind hours. Background concentrations are PM-10 concentrations from natural sources and sources that are located outside of the nonattainment area. Background concentrations are not affected or reduced by implementation of committed control measures. He added that the Pinal Air Park PM-10 monitoring site, located south of the nonattainment area (approximately 20 miles north of Tucson), was used to establish background PM-10 concentrations for the West Pinal County nonattainment area. During elevated wind hours when the wind direction is blowing into the nonattainment area, the median PM-10 concentration at the Pinal Air Park site was 17.8 $\mu g/m^3$ based upon monitoring data from 2016-2018. During low wind hours, the median value at the Pinal Air Park site is 12.0 $\mu g/m^3$ based upon monitoring data from 2016-2018.

Mr. Poppen stated that part of the modeling protocol is the establishment of design days used to model attainment. The Serious Area PM-10 Plan must include modeling that demonstrates attainment of the PM-10 standard at all PM-10 monitors within the West Pinal County nonattainment area. Design days are specific PM-10 exceedance days that are representative of the conditions (e.g., meteorology and PM-10 emission sources) that currently cause exceedances to occur within the nonattainment area. Additionally, design

day PM-10 concentrations must be reduced to the level of the PM-10 standard through both AERMOD and rollback modeling in order to show that the reduction benefits of the committed control measures are sufficient to demonstrate attainment of the PM-10 standard in the nonattainment area.

Mr. Poppen specified that design days for the Hidden Valley, Pinal County Housing and Stanfield monitors have been identified and selected based upon factors such as high PM-10 concentrations, meteorological conditions, diurnal concentration patterns, seasonal patterns, and the feasibility of modeling selected design days. He displayed a table that listed the eight days that will be modeled as design days both under low wind and elevated wind conditions at the three monitoring sites. In addition, he displayed five maps of the monitoring sites that depicted a low-wind domain and an elevated-wind domain within a four-mile radius.

Mr. Poppen stated that the attainment year for modeling is based upon the implementation schedule provided with the commitments to implement measures. The earliest all Best Available Control Measures (BACM) and Most Stringent Measures (MSM) will fully be in place and implemented is in 2024. Under this schedule, 2026 may be the earliest year that attainment could be demonstrated; this would allow for three complete years (2024-2026) of full implementation of all committed BACM and MSM measures. The year 2027 is the latest extension year allowed by the Clean Air Act and is also being evaluated should modeled attainment in 2026 not be possible. To demonstrate attainment of the 24-hour PM-10 standard in the attainment year, the 24-hour concentrations estimated by AERMOD and the rollback technique should not exceed 154 $\mu g/m^3$ at monitors in the modeling domains on the selected design days. Since AERMOD modeling results may differ from observed, monitored PM-10 concentrations, AERMOD results will be applied in a relative manner. The percent change in AERMOD modeled PM-10 concentrations between the base year and the attainment year will be applied to the monitored value (excluding background concentrations). For elevated wind hours where rollback is used to estimate the impact of committed windblown dust controls in the attainment year, the ratio of the base year windblown dust emissions to the attainment year windblown dust emissions will be applied to the design day hourly concentrations (excluding background concentrations).

Chair Sheldon asked if the rollback approved for Maricopa County and Clark County by EPA in the past included the distance-weighted rollback. Mr. Poppen responded that the MAG 2012 Five Percent Plan used distance weighting. The Clark County plans were simple rollback where distance weighting was not used.

5. Valley Metro Update on the Share The Ride System and Rideshare Month

Lillian Duarte, Valley Metro, gave an update on Valley Metro's Share The Ride System and Rideshare Month. Ms. Duarte stated that a new element, the Emissions Calculator, was recently added to the sharetheride.com dashboard. The new Emissions Calculator includes

many beneficial features: 1) It is designed to estimate emissions saved from teleworking; 2) It is a tool for managers; 3) It presents values for emissions saved; 4) The values translate into tangible outcomes (trees grown, leaf blowing); and 5) It is available for free to everyone at sharetheride.com. She explained that anyone can see what their current footprint is before information such as teleworking is entered. They can see the cost of commuting and the amount of pollutants emitted. Once the inputs are populated, such as teleworking two days per week, the calculator presents values for emissions and commuting costs saved. These values are then translated into tangible outcomes, such as number of trees grown for 10 years (for carbon dioxide) and number of hours of leaf blowing (for volatile organic compounds, nitrogen oxides, and fine particulates). The tool is meant for anyone to quickly see the environmental benefits of teleworking in Maricopa County.

Ms. Duarte stated that Valley Metro conducts two major commute promotions annually: Valley Bike Month in April focuses on bicycles as a commute option and Rideshare Month in October focuses on all commute modes such as carpool, vanpool, light rail, bicycle, bus, and telework. She noted that Valley Metro's Rideshare Month encourages employers who participate in the Travel Reduction Program to introduce employees to trying something new and to offer incentives for them to get involved in rideshare options. Ms. Duarte provided a Valley Metro public service announcement (PSA) video that highlighted October's Rideshare Month. She mentioned that Valley Metro partnered with Harkins Theatres to play the PSA at all local Harkins Theatres, which is currently running through October 15, 2021. Additionally, moviegoers who take a snapshot of the Rideshare Month PSA, post it on Valley Metro's Share the Ride and Save Facebook page with the hashtag #RideshareMonth2021, along with the title of their favorite commute-themed movie are eligible to win movie passes.

Ms. Duarte discussed Valley Metro's website sharetheride.com where people may register for free, track commute trips, find commute partners, and log alternative commute trips such as carpool, vanpool, transit, telework, and bike. She noted that currently, through September 30, 2021, participants who take the Rideshare Month Pledge are eligible to win a gift card to a local restaurant. Also, Rideshare Month participants may go to sharetheride.com to join the commuter challenge to compete with other teams or individuals to win daily, weekly, and monthly prizes. She mentioned that during Rideshare Month, participants who track commutes may earn badges.

Ms. Duarte indicated that Rideshare Month's artwork is available at valleymetro.org in the Commute Solutions section where select images may be downloaded for bulletin or poster use. Ms. Duarte encouraged the Committee to spread the word regarding October's Rideshare Month and Valley Metro's new Emissions Calculator. She added that Abigail Cooksey-Williams, TDM Manager for Commute Solutions at Valley Metro, can be contacted if there are questions or if you would like more information.

Mr. Saldamando expressed appreciation for the presentation and commented that the City

of Goodyear has many employees who telecommute on Thursdays and Fridays. He inquired if Valley Metro is looking for telework numbers from a company standpoint or an individual standpoint. Ms. Duarte responded that Emissions Calculator provides an opportunity for employers to gain insight into the impact of teleworking at their respective sites and organizations.

6. Reduce Dust When Planting Winter Ryegrass

Lindy Bauer, Maricopa Association of Governments, stated that the fall season is here and the Maricopa County Air Quality Department (MCAQD) encourages commercial properties, government agencies, and residents to take dust reduction measures when planting winter ryegrass in the fall. Scalping existing Bermuda grass during overseeding can impact air quality by generating dust. She noted that MCAQD offers very good tips to help prevent dust during the overseeding process and are as follows: Avoid scalping on windy days and on High Pollution Advisory days; Do not over-dry the area prior to scalping; Apply water to moisten the area prior to scalping; Reduce the area to be overseeded and the depth of the scalping; Keep dust collection screens and filters in good working condition; Sweep loose debris from paved surfaces instead of using a leaf blower, see the Maricopa County P-25 Ordinance; and, Moisten material piles before loading into dumpsters. Ms. Bauer indicated that we have attained the PM-10 standard and it is important to continue to attain the PM-10 standard.

Ms. McGennis asked if MAG is broadcasting the tips for reducing dust when planting winter ryegrass via radio spots or similar media outlets. Ms. Bauer responded that MCAQD issued a press release on September 14, 2021, entitled Reduce Dust When Planting Winter Ryegrass and MAG staff thought it was a perfect time to share it with the Committee. Ms. McGennis expressed interest in distributing a copy of this information to golf courses and also neighborhood associations to reach residents with grass lawns. Ms. Bauer stated that was a great idea and MAG staff will discuss the possibility with MCAQD.

Mr. Umeda stated that the golf course industry has best management practices regarding the overseeding process and they work to minimize dust conditions. He noted that in recent years, there have been modifications in the practice itself where scalping has been reduced to prevent the amount of dust previously generated. Therefore, there is a reduction in dust generated from the professionals on the golf course properties as well as the baseball stadiums. He mentioned that the University of Arizona Cooperative Extension published a bulletin, Overseeding Winter Grasses into Bermudagrass Turf, which describes the practices for minimizing dust. The bulletin is available to the public and the landscape industry and may be accessed at turf.arizona.edu.

Ms. Simpson stated that the Town of Queen Creek, as a municipality, receives MCAQD press releases and in turn distributes the information to the Town's residents and homeowner associations via social media platforms such as Facebook and NextDoor, and e-newsletters.

She added that MCAQD has great templates to use for any medium.

7. Requests for Future Agenda Items

Chair Sheldon requested suggestions for future agenda items. No requests were made.

Adjournment

There being no further business, the meeting adjourned at 2:26 p.m.

Agenda Item #4

DRAFT

September 2021

Conformity Analysis

For the
FY 2022-2025 MAG Transportation Improvement Program* and the *MOMENTUM 2050 Regional Transportation Plan

EXECUTIVE SUMMARY

MARICOPA ASSOCIATION of GOVERNMENTS

EXECUTIVE SUMMARY

This report presents the 2021 MAG Conformity Analysis for the FY 2022-2025 MAG Transportation Improvement Program and MOMENTUM 2050 MAG Regional Transportation Plan. The Maricopa Association of Governments is the designated Metropolitan Planning Organization (MPO) for Maricopa County and portions of Pinal County including Apache Junction, Florence, and Maricopa. As a result of this designation, MAG prepares the Transportation Improvement Program and Regional Transportation Plan, and the associated conformity analyses. The FY 2022-2025 MAG Transportation Improvement Program serves as a detailed guide for preservation, expansion, and management of public transportation services. The MOMENTUM 2050 MAG Regional Transportation Plan covers FY 2022 through FY 2050 providing the blueprint for future transportation investments in the region. The Regional Transportation Plan includes funding for freeways and highways, streets, regional bus and high capacity transit, as well as bicycle and pedestrian facilities, commensurate with available funding. This conformity analysis supports a finding of conformity on the FY 2022-2025 MAG Transportation Improvement Program and MOMENTUM 2050 Regional Transportation Plan for the Maricopa Association of Governments metropolitan planning area.

On May 9, 2013, the MAG Metropolitan Planning Area Boundary was expanded due to the 2010 Census urbanized area updates. For transportation planning and programming purposes, the Federal Highway Administration regulations state that at a minimum, the Metropolitan Planning Area must encompass the entire existing urbanized area boundary as well as the contiguous geographic area(s) likely to become urbanized within the next 20 years. The updated urbanized area boundary for the MAG region included areas within Pinal County. Due to this expansion, the MAG Regional Council amended the MAG By-laws to recognize the Metropolitan Planning Area Boundary and to provide for members from Pinal County within the boundary. The MAG Metropolitan Planning Area Boundary now includes the Town of Florence, City of Maricopa, the portion of the Gila River Indian Community within Pinal County, and unincorporated areas within Pinal County.

Also, on May 6, 2013, the Sun Corridor Metropolitan Planning Organization was designated in the Pinal County area. The Sun Corridor Metropolitan Planning Area Boundary includes the cities of Casa Grande, Eloy, Coolidge, and unincorporated areas of Pinal County.

Both the MAG Metropolitan Planning Area Boundary and the Sun Corridor Metropolitan Planning Area Boundary include portions of the West Pinal PM-10 Nonattainment Area and West Central Pinal PM-2.5 Nonattainment Area located in Pinal County. Both nonattainment areas are covered by the boundaries of the two metropolitan planning

organizations. Consequently, transportation conformity is required to be demonstrated for both nonattainment areas by both metropolitan planning organizations. Please refer to Figure ES-1.

To provide assistance to the Sun Corridor Metropolitan Planning Organization, MAG has offered to prepare conformity analyses for the PM-10 and PM-2.5 nonattainment areas in Pinal County, to enable transportation projects in both metropolitan planning organizations to proceed. At a June 17, 2013 meeting with the Arizona Department of Transportation, Sun Corridor Metropolitan Planning Organization and MAG, there was general concurrence that MAG would prepare the initial conformity analysis. The Maricopa Association of Governments works through a cooperative effort with the Arizona Department of Transportation, Arizona Department of Environmental Quality, and Sun Corridor Metropolitan Planning Organization on the coordination of transportation planning activities and conformity analyses consistent with the Memorandum of Understanding among the agencies.

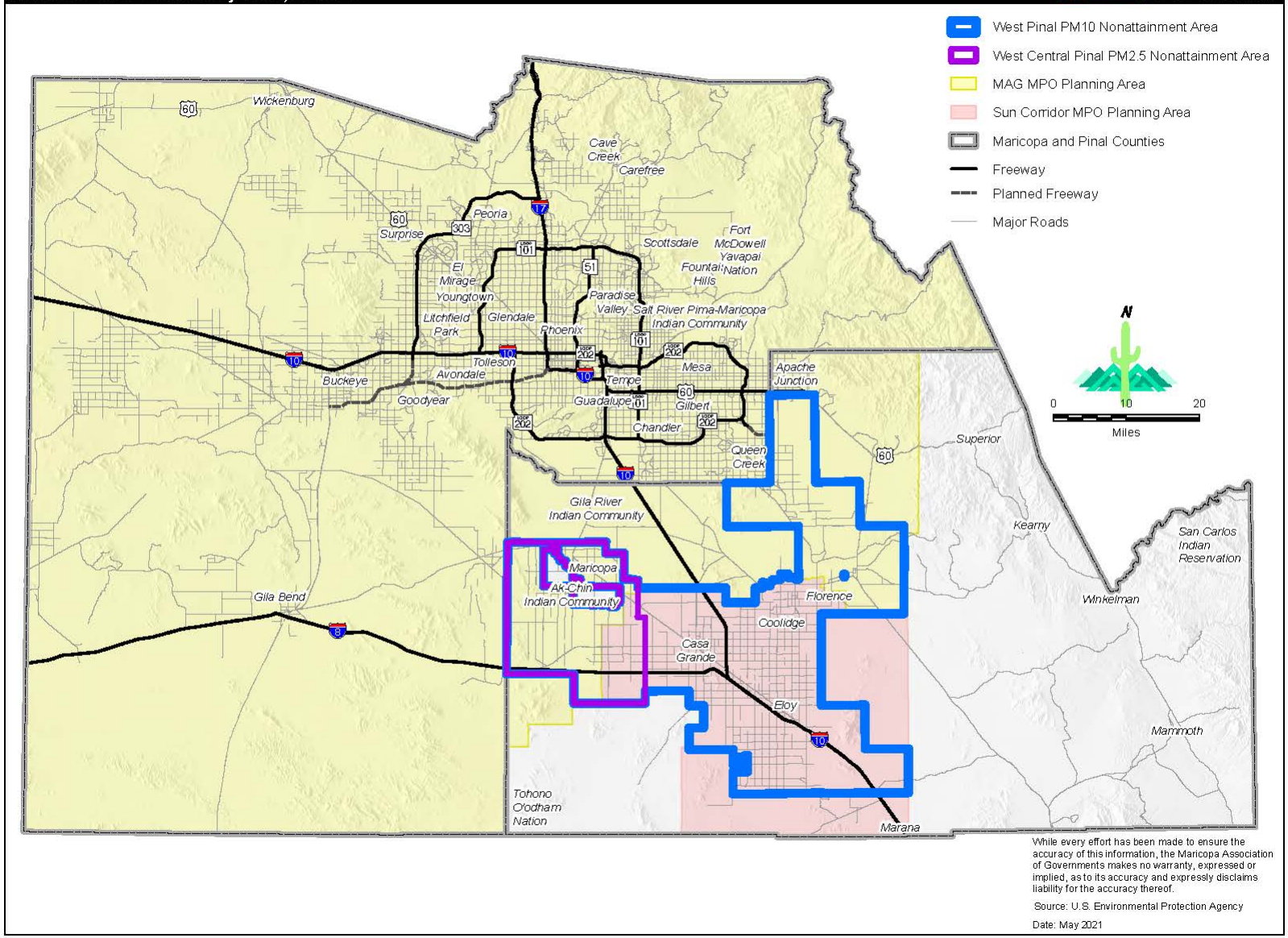
The 2021 MAG Conformity Analysis for the FY 2022-2025 MAG Transportation Improvement Program and MOMENTUM 2050 MAG Regional Transportation Plan includes results of the regional emissions analysis for carbon monoxide, eight-hour ozone, and PM-10 for the Maricopa County region as well as PM-10 for the West Pinal PM-10 Nonattainment Area and PM-2.5 and NOx for the West Central Pinal PM-2.5 Nonattainment Area located in Pinal County. Summarized below are the applicable federal criteria or requirements for conformity determinations, the conformity tests applied, regional emissions analysis results, and an overview of the organization of this report. Figures presenting the conformity test results and transportation control measure funding in the FY 2022-2025 MAG Transportation Improvement Program are provided at the end of the Executive Summary.

CONFORMITY REQUIREMENTS

The federal transportation conformity rule (40 Code of Federal Regulations Parts 51 and 93) specifies criteria and procedures for conformity determinations for transportation plans, programs, and projects and their respective amendments. The federal transportation conformity rule was first promulgated in 1993 by EPA, following the passage of amendments to the federal Clean Air Act in 1990. The federal transportation conformity rule has been revised several times since its initial release to reflect both EPA rule changes and court opinions. The transportation conformity rule and court opinions are summarized in Chapter 1.

The conformity rule applies nationwide to “all nonattainment and maintenance areas for transportation-related criteria pollutants for which the area is designated nonattainment or has a maintenance plan” (40 CFR 93.102). At this time, portions of Maricopa County are designated as a nonattainment or maintenance area with respect to federal air quality standards for three criteria pollutants, carbon monoxide (CO), eight-hour ozone, and particulate matter less than or equal to ten microns in diameter (PM-10), and portions of

Figure ES-1: MAG and Sun Corridor MPO Planning Areas and Air Quality Nonattainment Areas for the Pinal County Area, Arizona



While every effort has been made to ensure the accuracy of this information, the Maricopa Association of Governments makes no warranty, expressed or implied, as to its accuracy and expressly disclaims liability for the accuracy thereof.

Source: U.S. Environmental Protection Agency

Date: May 2021

Pinal County are designated as a nonattainment area with respect to PM-10 and particulate matter less than or equal to 2.5 microns in diameter (PM-2.5). Metropolitan transportation plans, programs, and projects in the nonattainment or maintenance areas of both counties must satisfy the requirements of the federal transportation conformity rule. Under the federal transportation conformity rule, the principal criteria for a determination of conformity for transportation plans and programs are:

(1) the TIP and Regional Transportation Plan must pass an emissions budget test with a budget that has been found to be adequate or approved by EPA for transportation conformity purposes, or interim emissions tests;

(2) the latest planning assumptions and emission models in force at the time the conformity analysis begins must be employed;

(3) the TIP and RTP must provide for the timely implementation of transportation control measures (TCMs) specified in the applicable air quality implementation plans; and,

(4) consultation.

Consultation generally occurs at the beginning of the conformity analysis process, on the proposed models, associated methods, and assumptions for the upcoming analysis and the projects to be assessed, and at the end of the process, on the draft conformity analysis report. The final determination of conformity for the TIP and RTP is the responsibility of the Federal Highway Administration and the Federal Transit Administration.

The conformity tests specified in the federal transportation conformity rule are: (1) the emissions budget test, and (2) interim emissions tests. For the emissions budget test, predicted emissions for the TIP and RTP must be less than or equal to the motor vehicle emissions budget specified in the approved air quality implementation plan or the emissions budget found by EPA to be adequate for transportation conformity purposes. If there is no approved air quality plan for a pollutant for which the region is in nonattainment or no emissions budget found to be adequate for transportation conformity purposes, interim emissions tests apply.

MARICOPA COUNTY NONATTAINMENT AND MAINTENANCE AREAS

For the Maricopa County nonattainment and maintenance areas, separate tests were conducted for carbon monoxide (CO), volatile organic compounds (VOC), nitrogen oxides (NOx), and PM-10. Budget tests were performed for the Maricopa County nonattainment and maintenance areas using EPA-approved budgets for transportation conformity purposes. On March 3, 2016, EPA published the final rule in the *Federal Register* approving the MAG 2013 Carbon Monoxide Maintenance Plan, including the 2025 conformity budget, effective April 4, 2016. On June 13, 2012, EPA approved the MAG 2007 Eight-Hour Ozone Plan (1997 ozone standard) including the 2008 conformity budgets for volatile organic compounds and nitrogen oxides, effective July 13, 2012. On September 17, 2014, EPA approved the MAG 2009 Eight-Hour Ozone Maintenance Plan

(1997 ozone standard) and 2025 conformity budgets for volatile organic compounds and nitrogen oxides, effective October 17, 2014. In addition, on June 2, 2020, EPA approved the MAG 2017 Eight-Hour Ozone Moderate Area Plan (2008 ozone standard) and 2017 conformity budgets for volatile organic compounds and nitrogen oxides, effective July 2, 2020. On June 10, 2014, EPA published the final rule approving the MAG 2012 Five Percent Plan for PM-10 and 2012 conformity budget, effective July 10, 2014. On July 25, 2002, EPA approved the Revised MAG 1999 Serious Area Particulate Plan for PM-10 and 2006 conformity budget, effective August 26, 2002.

Chapter 1 summarizes the applicable air quality implementation plans and conformity tests for carbon monoxide, eight-hour ozone, and PM-10. For the 2021 MAG Conformity Analysis for the FY 2022-2025 MAG TIP and MOMENTUM 2050 MAG Regional Transportation Plan, the emissions budget test was performed for carbon monoxide using the approved conformity budget from the MAG 2013 Carbon Monoxide Maintenance Plan. For eight-hour ozone, the emissions budget tests were performed for volatile organic compounds (VOC) and nitrogen oxides (NOx) using the approved conformity budgets from the MAG 2017 Eight-Hour Ozone Moderate Area Plan, MAG 2007 Eight-Hour Ozone Plan, and MAG 2009 Eight-Hour Ozone Maintenance Plan. For PM-10, the emissions budget test was performed using both the approved conformity budget from the MAG 2012 Five Percent Plan for PM-10 and the approved conformity budget from the Revised MAG 1999 Serious Area Particulate Plan for PM-10.

Results of the Conformity Analysis

For the 2021 MAG Conformity Analysis, a regional emissions analysis was conducted for carbon monoxide and PM-10 for the years 2025, 2030, 2040, and 2050. For the eight-hour ozone precursors (volatile organic compounds and nitrogen oxides), a regional emissions analysis was conducted for the years 2023, 2025, 2030, 2040, and 2050. All analyses were conducted using the latest planning assumptions and emissions models in force at the time the conformity analysis started on August 13, 2021. The major conclusions of the 2021 MAG Conformity Analysis are:

- For carbon monoxide, the total vehicle-related emissions associated with implementation of the TIP and Regional Transportation Plan for the analysis years 2025, 2030, 2040, and 2050 are projected to be less than the approved 2025 emissions budget. The applicable conformity test for carbon monoxide is therefore satisfied. The results of the regional emissions analysis for carbon monoxide are presented in Figure ES-2.

- For eight-hour ozone, the total vehicle-related volatile organic compound and nitrogen oxide emissions associated with implementation of the TIP and Regional Transportation Plan for the analysis year of 2023 are projected to be less than the approved 2017 emissions budgets and the VOC and NOx emissions for the analysis years of 2025, 2030, 2040, and 2050 are projected to be less than the approved 2017 emissions budgets. The results of the regional emissions analysis for eight-hour ozone using the 2017 emissions budgets are presented in Figures ES-3 and ES-4. In addition, the total vehicle-related volatile organic compound and nitrogen oxide emissions associated with implementation of the TIP and Regional Transportation Plan for the analysis year of 2023 are projected

to be less than the approved 2008 emissions budgets and the VOC and NOx emissions for the analysis years of 2025, 2030, 2040, and 2050 are projected to be less than the approved 2025 emissions budgets. The applicable conformity tests for eight-hour ozone are therefore satisfied. The results of the regional emissions analysis for eight-hour ozone using the 2008 and 2025 emissions budgets are presented in Figures ES-5 and ES-6.

- For PM-10, the total vehicle-related emissions associated with implementation of the TIP and Regional Transportation Plan for the analysis years of 2025, 2030, 2040, and 2050 are projected to be less than the approved 2012 emissions budget and the approved 2006 emissions budget. The conformity test for PM-10 is therefore satisfied. The results of the regional emissions analysis for PM-10 are presented in Figure ES-7.

- A review of the implementation status of TCMs in applicable air quality plans has indicated that the TIP and Regional Transportation Plan will provide for the timely implementation of the TCMs and there are no obstacles to the implementation of any TCM. The current status of TCMs identified in applicable air quality implementation plans is documented in Chapter 5 of this report. Figure ES-8 presents the total funding programmed in the TIP for transportation projects and programs that implement transportation control measures and other air quality measures.

- Consultation has been conducted in accordance with federal requirements.

Figure ES-2: Carbon Monoxide Results for Conformity Budget Test
Maricopa County Nonattainment and Maintenance Areas

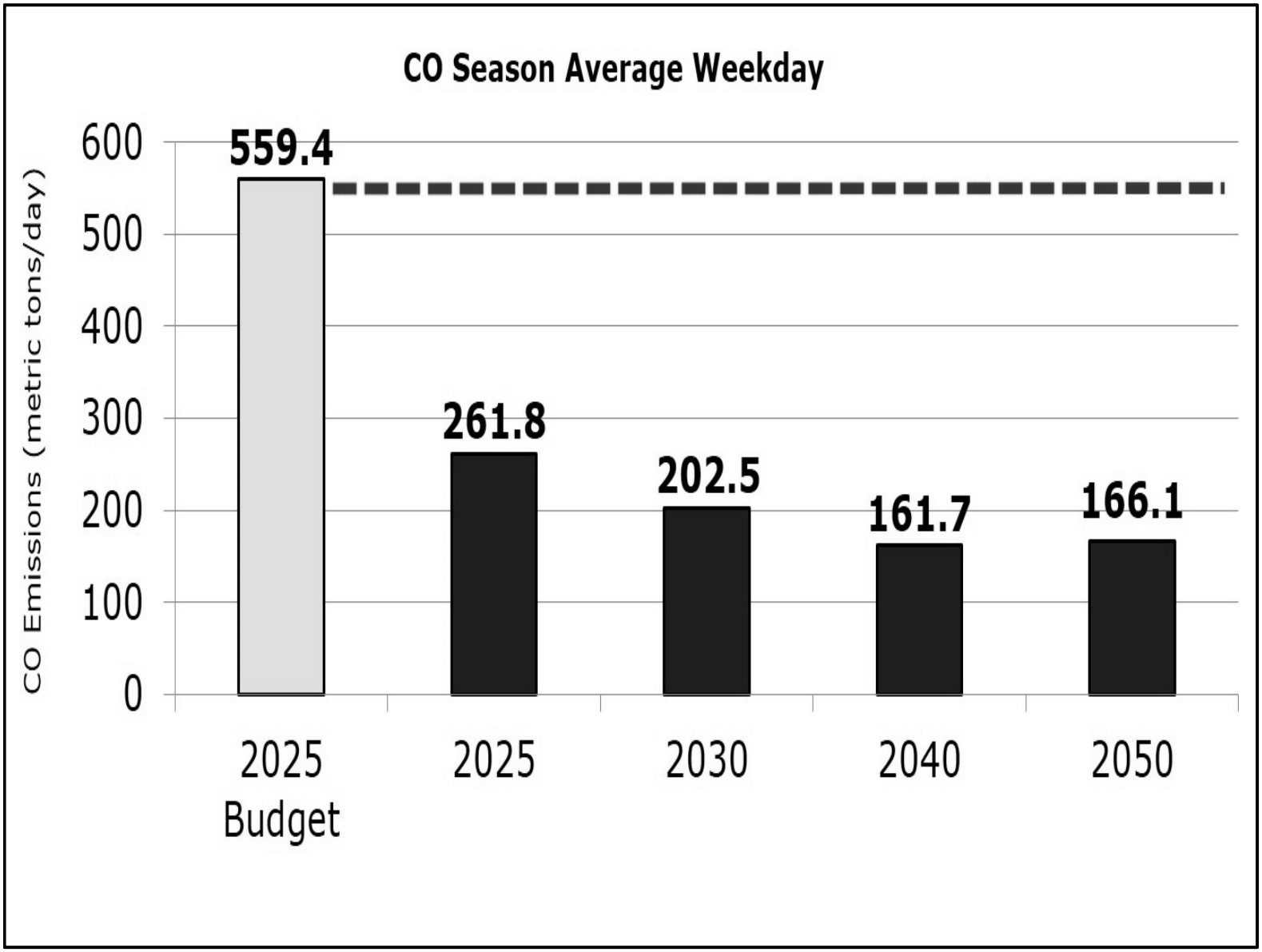
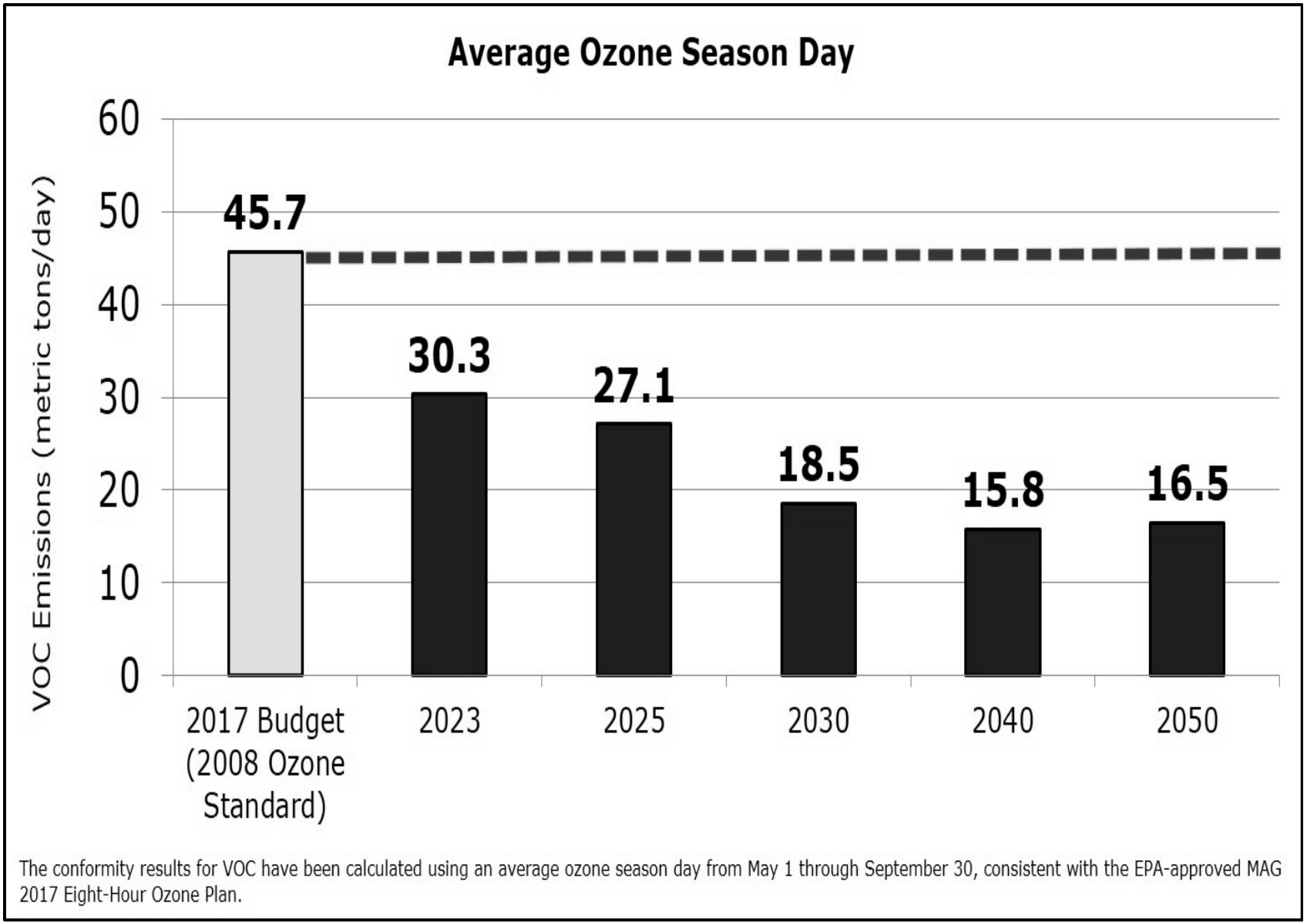
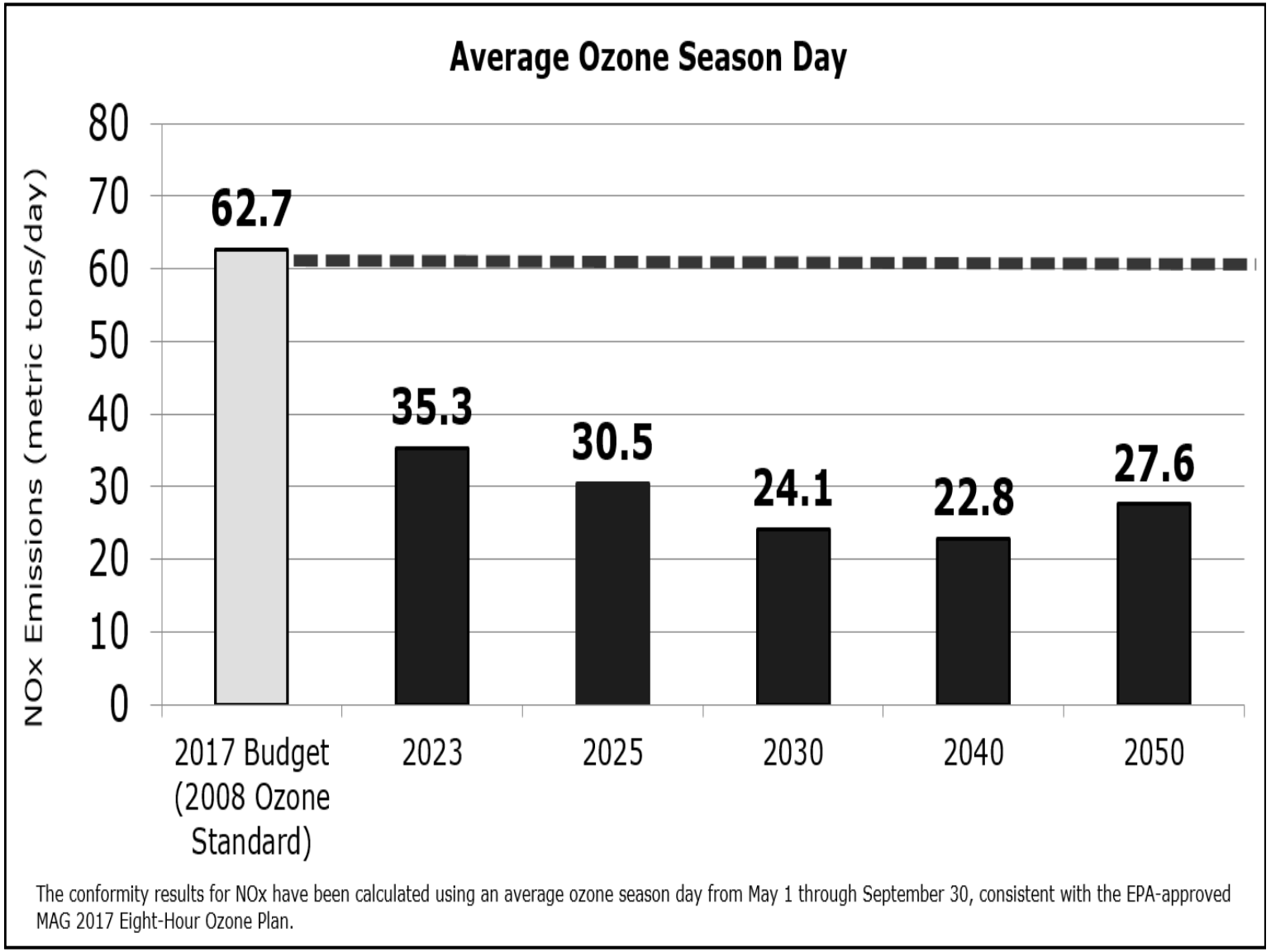


Figure ES-3: Eight-Hour Ozone: Volatile Organic Compounds (VOC) Results for Conformity Budget Test
Maricopa Nonattainment and Maintenance Areas



The conformity results for VOC have been calculated using an average ozone season day from May 1 through September 30, consistent with the EPA-approved MAG 2017 Eight-Hour Ozone Plan.

Figure ES-4: Eight-Hour Ozone: Nitrogen Oxides (NOx) Results for Conformity Budget Test
Maricopa Nonattainment and Maintenance Areas



The conformity results for NOx have been calculated using an average ozone season day from May 1 through September 30, consistent with the EPA-approved MAG 2017 Eight-Hour Ozone Plan.

Figure ES-5: Eight-Hour Ozone: Volatile Organic Compounds (VOC) Results for Conformity Budget Test
Maricopa Nonattainment and Maintenance Areas

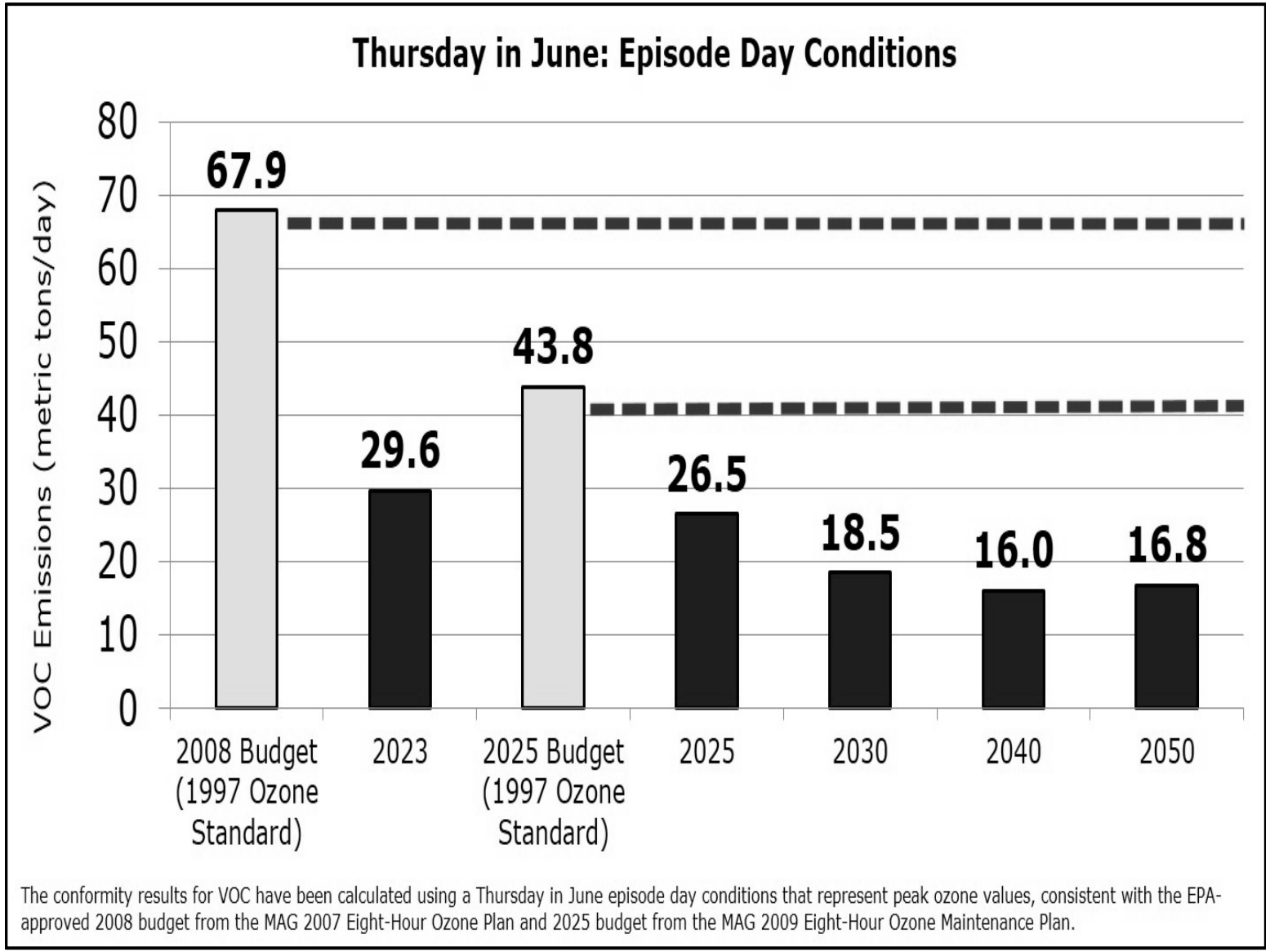


Figure ES-6: Eight-Hour Ozone: Nitrogen Oxides (NOx) Results for Conformity Budget Test
Maricopa Nonattainment and Maintenance Areas

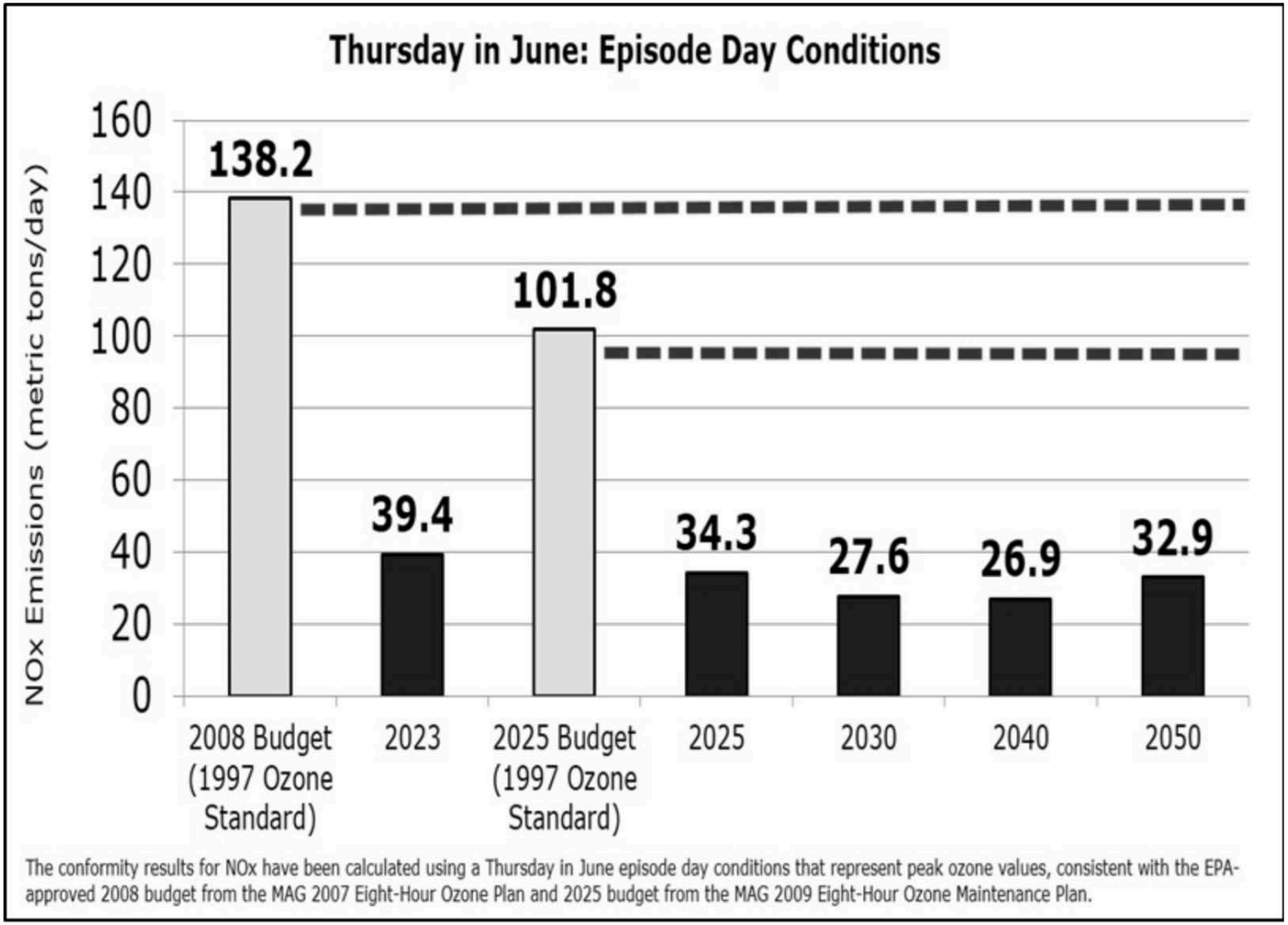


Figure ES-7: PM-10 Results for Conformity Budget Test
Maricopa County Nonattainment and Maintenance Areas

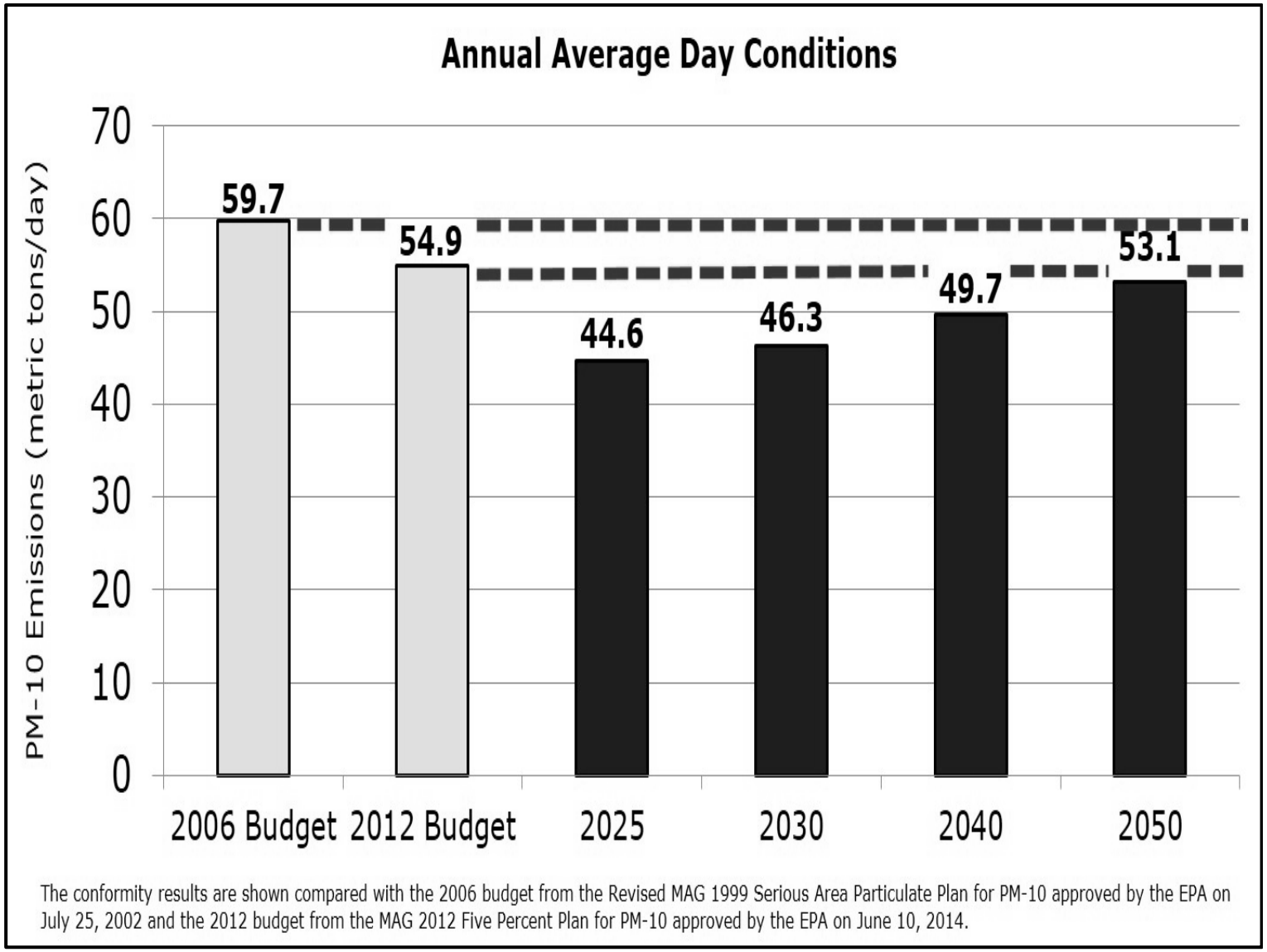
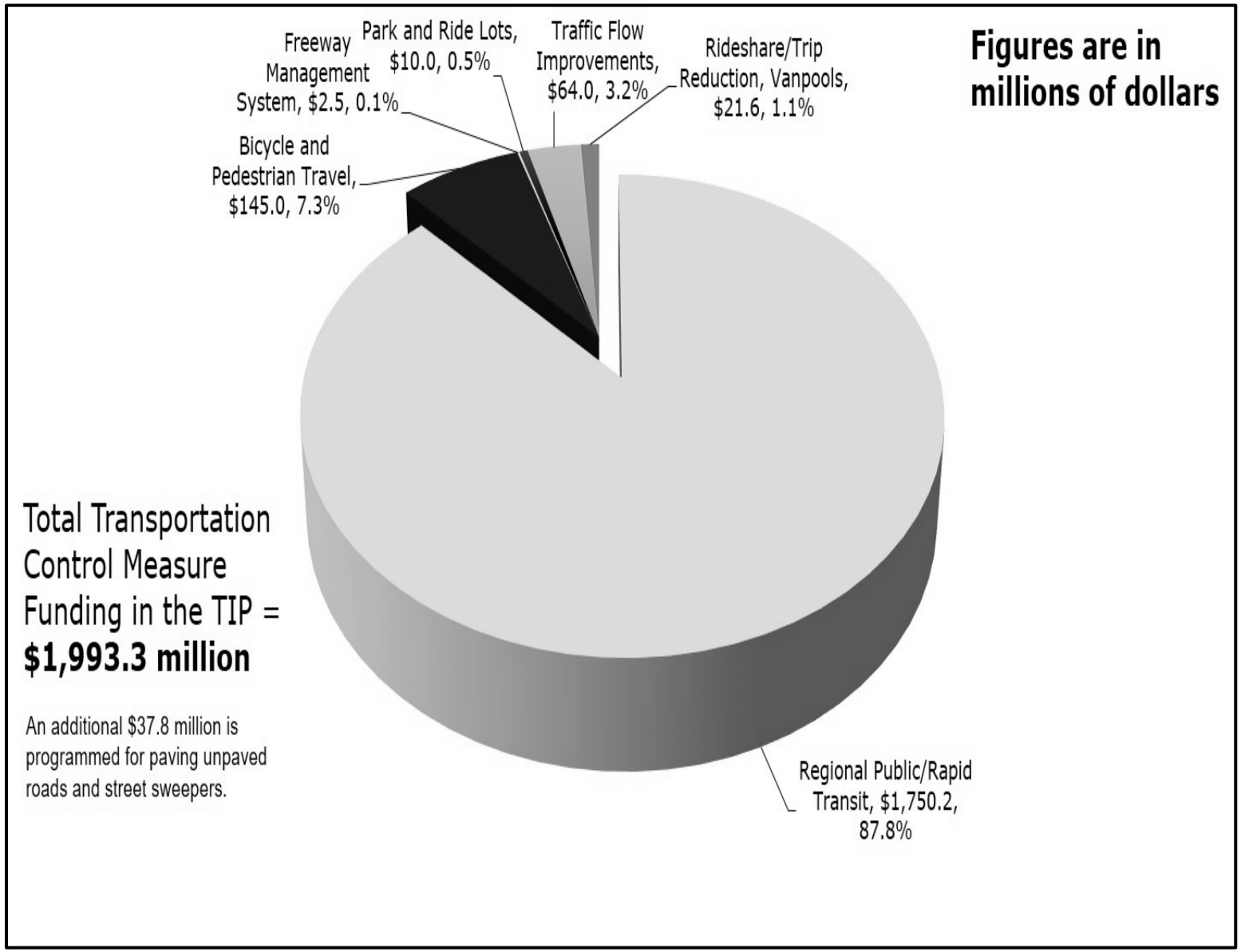


Figure ES-8: Transportation Control Measure Funding in the FY 2022-2025 MAG Transportation Improvement Program



PINAL COUNTY NONATTAINMENT AREAS

For the Pinal County nonattainment areas, there are no adequate or approved motor vehicle emissions budgets for conformity. Therefore, the conformity interim emissions tests were applied. The action/baseline tests were conducted for PM-10 for the West Pinal PM-10 Nonattainment Area and for PM-2.5 and NOx for the West Central Pinal PM-2.5 Nonattainment Area for the analysis years of 2025, 2030, 2040, and 2050. For each test, the required emissions estimates were developed using the transportation and emission modeling approaches required under the federal transportation conformity rule and summarized in this document.

For PM-10, for each analysis year the projected emissions for the action scenario are not greater than the projected emissions for the baseline scenario. Since the PM-10 emissions projected for the action scenarios are not greater than the PM-10 emissions projected for the baseline scenarios, the conformity interim emission test is satisfied. It is also reasonable to expect the action emissions would not exceed the baseline emissions for the time periods between the analysis years. The results of the regional emissions analysis for PM-10 are presented in Figure ES-9.

For PM-2.5, for each analysis year the projected emissions for the action scenario are not greater than the projected emissions for the baseline scenario. Since the PM-2.5 emissions projected for the action scenarios are not greater than the PM-2.5 emissions projected for the baseline scenarios, the conformity interim emission tests are satisfied. It is also reasonable to expect the action emissions would not exceed the baseline emissions for the time periods between the analysis years. The results of the regional emissions analysis for PM-2.5 are presented in Figure ES-10.

For NOx, for each analysis year the projected emissions for the action scenario are not greater than the projected emissions for the baseline scenario. Since the NOx emissions projected for the action scenarios are not greater than the NOx emissions projected for the baseline scenarios, the conformity interim emission tests are satisfied. It is also reasonable to expect the action emissions would not exceed the baseline emissions for the time periods between the analysis years. The results of the regional emissions analysis for NOx are presented in Figure ES-11.

Figure ES-9: PM-10 Results for Conformity Interim Emission (Action/Baseline) Test
Pinal County PM-10 Nonattainment Area

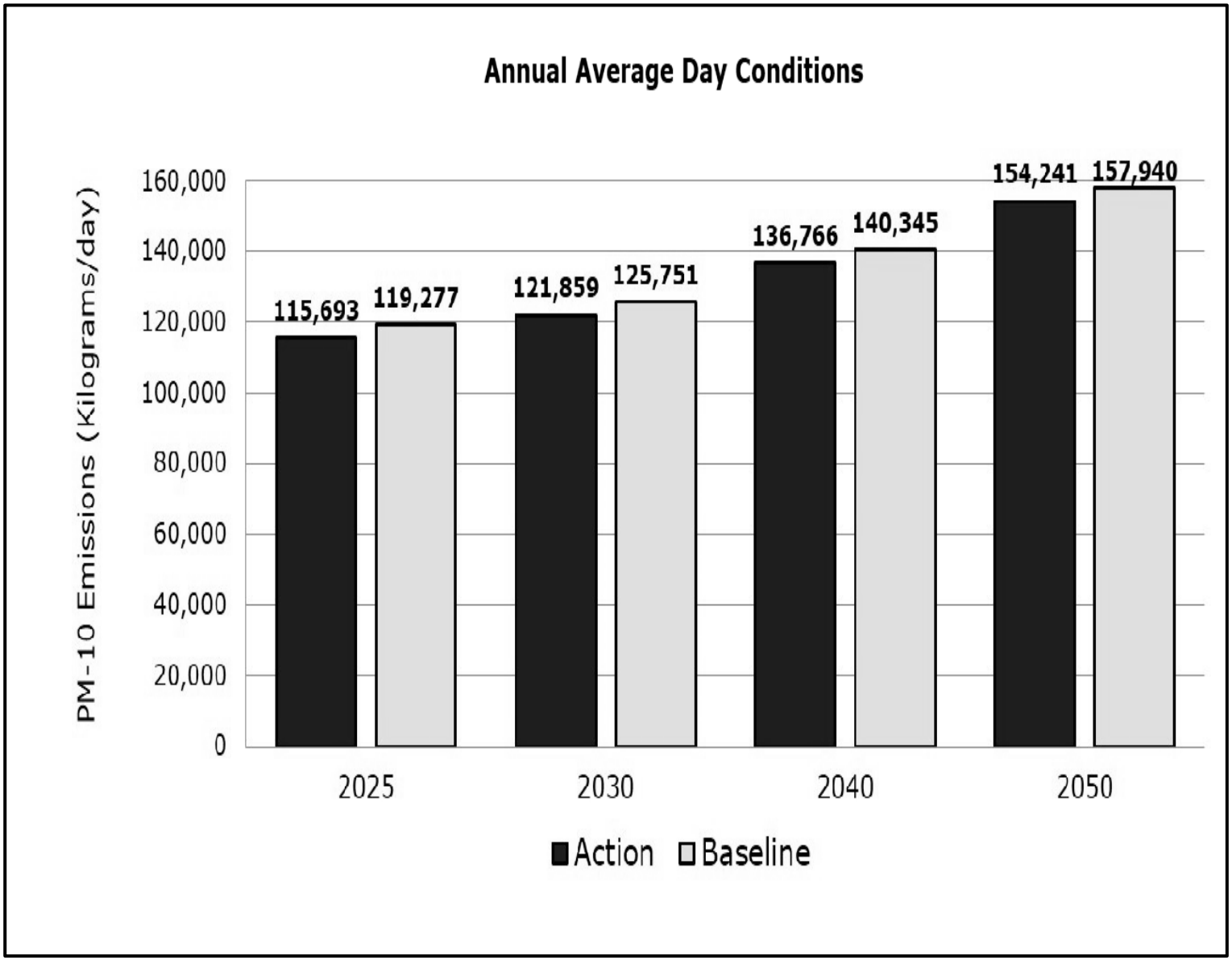


Figure ES-10: PM-2.5 Results for Conformity Interim Emission (Action/Baseline) Test
Pinal County PM-2.5 Nonattainment Area

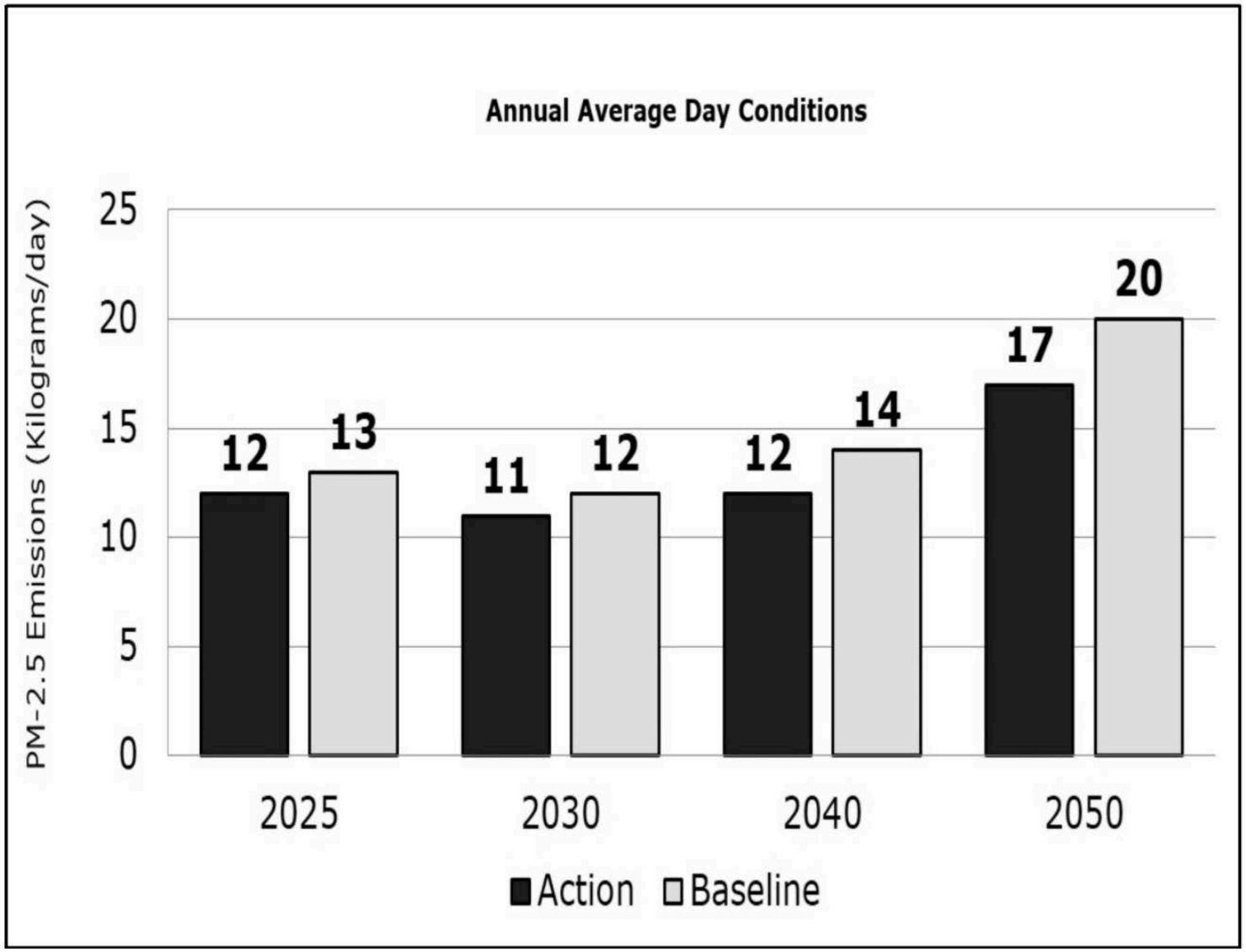
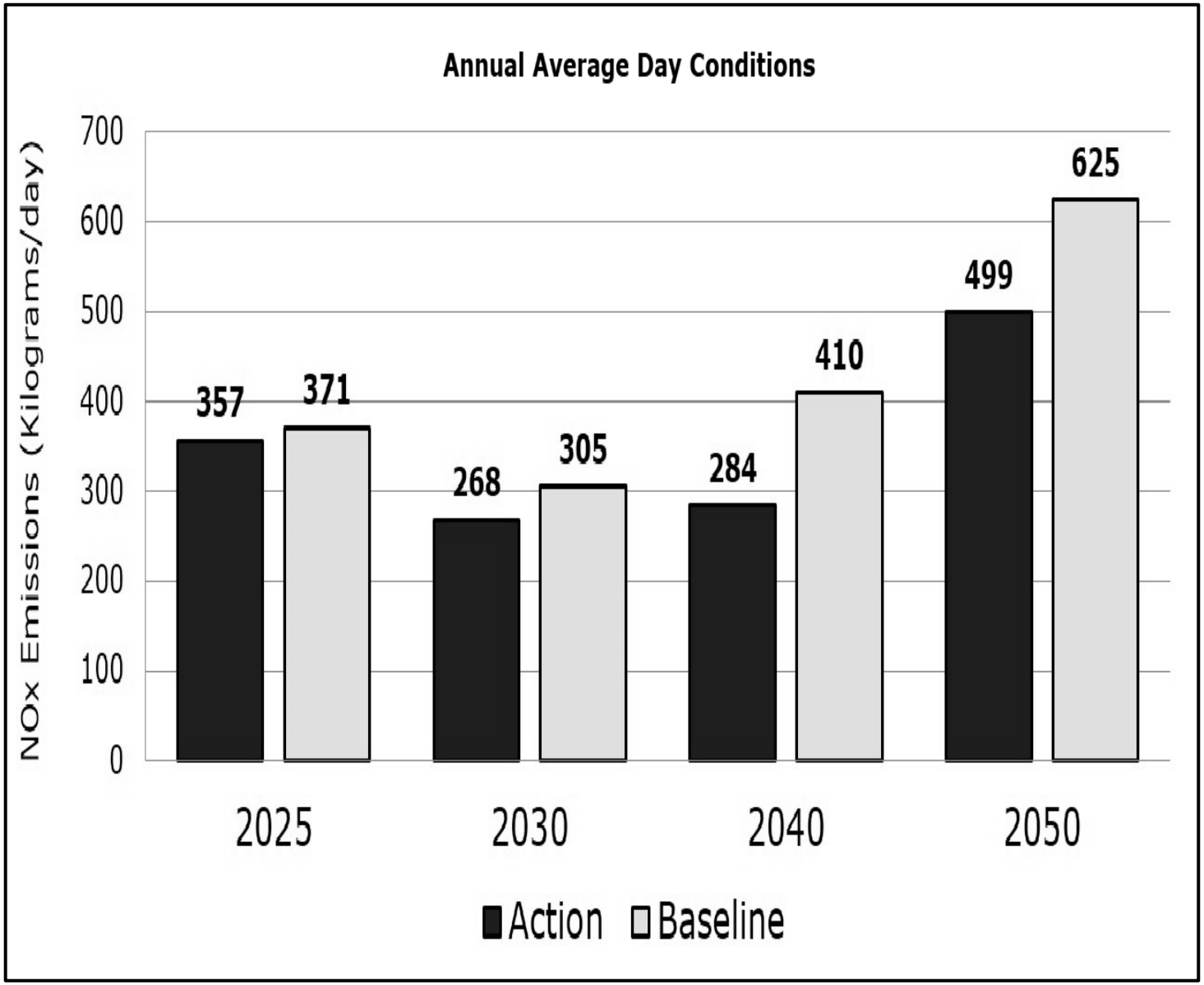


Figure ES-11: NOx Results for Conformity Interim Emission (Action/Baseline) Test
Pinal County PM-2.5 Nonattainment Area



REPORT ORGANIZATION

The report is organized into six chapters. Chapter 1 provides an overview of the applicable federal and state conformity rules and requirements, air quality implementation plans, and conformity test requirements. Chapter 2 contains a discussion of the latest planning assumptions. Chapter 3 includes a summary of the transportation model characteristics, key socioeconomic data, and other data related to the land use and transportation system forecasts, and Chapter 4 describes the air quality modeling used to estimate emission factors and mobile source emissions. Chapter 5 contains the documentation required under the federal transportation conformity rule for transportation control measures. The results of the conformity analysis for the MAG FY 2022-2025 Transportation Improvement Program and MOMENTUM 2050 MAG Regional Transportation Plan Update are provided in Chapter 6.

Excerpts from the applicable air quality plans, consultation documentation, and other related information are contained in the Appendices. The appendices include copies of memoranda previously circulated for consultation. The appendices of the final version of this report will also include any comments received and responses made as part of the 30-day consultation period on this draft report.

MARICOPA ASSOCIATION of GOVERNMENTS

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October 21, 2021

TO: Members of the MAG Air Quality Technical Advisory Committee

FROM: Dean Giles, Air Quality Planning Project Manager

SUBJECT: EVALUATION OF PROPOSED PM-10 CERTIFIED STREET SWEEPER PROJECTS FOR FY 2022 CMAQ FUNDING

The Maricopa Association of Governments staff has evaluated proposed PM-10 Certified Street Sweeper Projects for emission reductions and corresponding cost-effectiveness for FY 2022 Congestion Mitigation and Air Quality Improvement (CMAQ) Funds. Fourteen projects requesting approximately $3.86 million in federal funds were evaluated. The evaluation of these projects and supplemental information are included in the attached table. The table includes the proposed projects listed in order of cost effectiveness based on the amount of CMAQ funding requested. Following consideration of this information, the MAG Air Quality Technical Advisory Committee will be requested to recommend a prioritized list of PM-10 Certified Street Sweeper Projects for FY 2022 CMAQ funding to the MAG Management Committee and to retain the prioritized list for any additional FY 2022 CMAQ funds that may become available due to closeout or additional funding received by this region.

BACKGROUND

The purchase of PM-10 certified street sweeper projects supports the measure "PM-10 Efficient Street Sweepers" in the Revised MAG 1999 Serious Area Particulate Plan for PM-10. In addition, the MAG 2012 Five Percent Plan for PM-10 includes PM-10 Certified Street Sweepers. The FY 2020-2024 MAG Transportation Improvement Program contains $1,268,705 in FY 2022 CMAQ funding to encourage the purchase and utilization of PM-10 certified street sweepers. The purpose of the CMAQ program is to fund projects and programs in nonattainment and maintenance areas that assist in achieving air quality standards. A minimum local cash match of 5.7 percent on the CMAQ eligible portion of the project is required.

On August 2, 2021, MAG solicited PM-10 certified street sweeper projects in the PM-10 nonattainment areas from member agencies. Eligible street sweepers are defined as those which have been certified by the South Coast Air Quality Management District as meeting that agency's Rule 1186 certification standards. Project applications were due by September 17, 2021.

EVALUATION AND PROJECT RANKING

According to the approved MAG Federal Fund Programming Guidelines and Procedures, the MAG Street Committee is to conduct a technical review of the project data from the applications. On October 12, 2021, the MAG Street Committee conducted a review of the PM-10 Certified Street Sweeper project applications and no questions were received prior to the meeting or asked during the meeting concerning street sweeper applications.

MAG staff estimated the emission reductions and cost effectiveness utilizing the February 2021 MAG CMAQ Methodologies. Federal CMAQ guidance requires that the estimated emission reductions for each project submitted for CMAQ funding be considered during project selection. The FY 2022 PM 10 Certified Street Sweeper project evaluation and supplemental information are provided in the attached table. The proposed projects have been listed in descending order of cost-effectiveness based on the amount of CMAQ funding requested.

Following consideration of this information, the MAG Air Quality Technical Advisory Committee will be requested to make a recommendation on a prioritized list of proposed projects for FY 2022 CMAQ funding to the MAG Management Committee. After the MAG Regional Council approval of projects for funding, MAG will issue a formal authorization to proceed with the purchase of the proposed street sweepers in a letter to the project sponsor.

If you have any questions or need additional information, please contact me at 602-452-5013.

Attachment

List of Proposed PM-10 Certified Street Sweeper Projects for FY 2022 CMAQ Funding

$1,268,705 in CMAQ Funding is Available for Sweeper Projects

										Supplemental Information			
						The requested certified street sweeper will:				Have local resources been committed such as staff or equipment to support the operation of the sweeper?		Please indicate in what geographical area(s) the requested certified street sweeper will operate	Number of certified street sweepers owned and operated by your agency. **
Agency	Federal Cost	Local Cost	Total Cost *	Daily Emission Reduction (Kilograms /day)	Cost-Effectiveness (CMAQ dollar cost per annual metric ton reduced)	Replace non-certified sweeper	Expand Area Swept	Increase Sweeping Frequency	Replace older certified sweeper	Yes	No		
Phoenix #4	$289,251	$17,484	$306,735	321	$351				✓	✓		Elliot Rd. to Camelback Rd. and Central Ave. to 107th Ave.	36
Tempe #2	$281,921	$17,041	$298,962	265	$416				✓	✓		Ray Rd. to Continental Dr. and Evergreen Dr. to Interstate-10.	6
Tempe #1	$281,921	$17,041	$298,962	230	$479				✓	✓		Ray Rd. to Continental Dr. and Evergreen Dr. to Interstate-10.	6
Queen Creek	$251,055	$15,175	$266,230	178	$549				✓	✓		Ellsworth Rd. to Kenworthy Rd. and Ocotillo Rd. to Hunt Hwy./Empire Rd.	5

										Supplemental Information			
						The requested certified street sweeper will:				Have local resources been committed such as staff or equipment to support the operation of the sweeper?		Please indicate in what geographical area(s) the requested certified street sweeper will operate	Number of certified street sweepers owned and operated by your agency. **
Agency	Federal Cost	Local Cost	Total Cost *	Daily Emission Reduction (Kilograms /day)	Cost-Effectiveness (CMAQ dollar cost per annual metric ton reduced)	Replace non-certified sweeper	Expand Area Swept	Increase Sweeping Frequency	Replace older certified sweeper	Yes	No		
Chandler ++	$263,307	$15,916	$279,222	113	$906				✓	✓		Chandler Blvd. to Pecos Rd. and Alma School Rd. to Gilbert Rd.; Chandler Heights Rd. to Germann Rd. and McQueen Rd. to Val Vista Rd.; Hunt Hwy. to Chandler Heights Rd. and Alma School Rd. to Cooper Rd.	11
Subtotal	**$1,367,455**												
Amount Available	**$1,268,705**												
Balance	**($98,750)**												
Phoenix #3	$289,251	$17,484	$306,735	99	$1,143				✓	✓		Pinnacle Peak Rd. to Dynamite Rd. and 43rd Ave. to 7th St.	36
Phoenix #2	$289,251	$17,484	$306,735	98	$1,147				✓	✓		Pinnacle Peak Rd. to Happy Valley Rd and 67th Ave. to 43rd Ave.	36
Phoenix #1	$289,251	$17,484	$306,735	82	$1,376				✓	✓		Pinnacle Peak Rd. to New River Rd. and Scottsdale Rd. to 67th Ave.	36

										Supplemental Information			
						The requested certified street sweeper will:				Have local resources been committed such as staff or equipment to support the operation of the sweeper?			
Agency	**Federal Cost**	**Local Cost**	**Total Cost ***	**Daily Emission Reduction (Kilograms /day)**	**Cost-Effectiveness (CMAQ dollar cost per annual metric ton reduced)**	**Replace non-certified sweeper**	**Expand Area Swept**	**Increase Sweeping Frequency**	**Replace older certified sweeper**	**Yes**	**No**	**Please indicate in what geographical area(s) the requested certified street sweeper will operate**	**Number of certified street sweepers owned and operated by your agency. ** **
Scottsdale #1	$291,747	$17,635	$309,382	58	$1,974				✓	✓		Chaparral Rd. to Thunderbird Rd. and Scottsdale Rd. to Pima Rd./Loop 101.	7
Scottsdale #2	$291,747	$17,635	$309,382	38	$3,005				✓	✓		Salt River Pima-Maricopa Indian Community to Frank Lloyd Wright Blvd. and Fountain Hills to Pima Rd./Loop 101.	7
Guadalupe	$268,787	$16,247	$285,034	31	$3,435			✓	✓	✓		Avenida del Yaqui, Calle Guadalupe and residential streets.	2
Glendale	$286,529	$17,319	$303,849	14	$7,725			✓		✓		Citywide	6
Litchfield Park	$208,790	$12,620	$221,410	3	$30,181		✓			✓		Camelback Rd; Downtown area.	2
Cave Creek	$273,564	$16,536	$290,099	3	$41,900				✓	✓		26th St. to 72nd St. and Tapekim Rd. to Spurcross Rd.	2
Total	**$3,856,372**												

Applications for Chandler, Guadalupe, Glendale, Phoenix #4, Queen Creek, Scottsdale #1, Tempe #1, and Tempe #2 indicate sweeping within four miles of a PM-10 monitor.

Application for Phoenix #4 indicates sweeping in Salt River Area.

Application for Queen Creek indicates sweeping in Pinal County.

* Total cost for the CMAQ eligible portion of the project; excludes ineligible equipment.

** The total number of certified street sweepers owned and operated by the agency, regardless of funding source.

++ For the Chandler sweeper project, initial funding of $164,557 is available in FY 2022 CMAQ. The remaining $98,750 of the $263,307 requested for the project may become available due to year-end closeout including any additional funding received by the region.

MARICOPA ASSOCIATION of GOVERNMENTS
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October 21, 2021

TO: Members of the MAG Air Quality Technical Advisory Committee

FROM: Dean Giles, Air Quality Planning Project Manager

SUBJECT: EVALUATION OF PROPOSED PM-10 PAVING UNPAVED ROAD PROJECTS FOR FY 2025 CMAQ FUNDING

The Maricopa Association of Governments staff has evaluated proposed PM-10 Paving Unpaved Road Projects for emission reductions and corresponding cost-effectiveness for FY 2025 Congestion Mitigation and Air Quality Improvement (CMAQ) Funds. In the Maricopa County PM-10 Nonattainment Area, four unpaved road projects requesting approximately $4.32 million in federal funds were evaluated. In the Pinal County PM-10 and PM-2.5 Nonattainment Areas, one unpaved road project requesting $1.20 million in federal funds was evaluated. Following consideration of this information, the MAG Air Quality Technical Advisory Committee will be requested to rank the PM-10 Paving Unpaved Road Projects for FY 2025 CMAQ funding to be forwarded to the MAG Transportation Review Committee.

BACKGROUND

On August 2, 2021, MAG solicited PM-10 Paving Unpaved Road Projects from member agencies in the Maricopa County PM-10 Nonattainment Area and the Pinal County PM-10 and PM-2.5 Nonattainment Areas. An amount of $5,015,301 in CMAQ funding is available to program PM-10 Paving Unpaved Road Projects for FY 2025. An additional $758,932 in CMAQ PM-2.5 funding is available for FY 2025 allocated by the Arizona Department of Transportation to MAG for projects that reduce PM-2.5 in portions of the West Central Pinal PM-2.5 Nonattainment Area located within the planning boundaries of both MAG and the Sun Corridor Metropolitan Planning Organization.

The West Central Pinal PM-2.5 Nonattainment Area is located within the larger West Pinal PM-10 Nonattainment Area. The Federal Highway Administration has mentioned using CMAQ PM-2.5 funding for paving projects that help to reduce PM-10 as well as PM-2.5. A minimum local cash match of 5.7 percent on the CMAQ eligible portion of the project is

required. Project applications were due by September 17, 2021. The paving of unpaved roads is a committed measure in the Revised MAG 1999 Serious Area Particulate Plan for PM-10 and is included in the MAG 2012 Five Percent Plan for PM-10.

EVALUATION AND PROJECT RANKING

Federal CMAQ guidance requires that the estimated emission reductions for each project submitted for CMAQ funding be considered during project selection. Consistent with the February 2021 MAG CMAQ Methodologies, MAG staff has estimated the emission reductions and calculated the cost-effectiveness for the proposed projects in the following attachments:

- Attachment A includes the proposed projects for the Maricopa County PM-10 Nonattainment Area in order of cost-effectiveness.

- Attachment B includes the proposed projects for the Maricopa County PM-10 Nonattainment Area in order of PM-10 emission reductions.

- Attachment C includes the proposed project for the Pinal County PM-10 and PM-2.5 nonattainment areas.

Also, according to the approved MAG Federal Fund Programming Guidelines and Procedures, project applications are to be reviewed by the MAG Street Committee. On October 12, 2021, the MAG Street Committee conducted a review of the PM-10 Paving Unpaved Road project applications and a summary of the clarifying questions from the meeting is provided in Attachment D.

Following consideration of this information, the MAG Air Quality Technical Advisory Committee will be requested to rank the proposed PM-10 Paving Unpaved Road Projects for FY 2025 CMAQ funding to be forwarded to the MAG Transportation Review Committee. The MAG Transportation Review Committee may consider the PM-10 Paving Unpaved Road Projects on December 16, 2021. The recommendations may be considered by the MAG Management Committee and the MAG Regional Council in January 2022.

If you have any questions or need additional information, please contact me at 602-452-5013.

Attachments

ATTACHMENT A

Proposed PM-10 Paving Unpaved Road Projects for FY 2025 CMAQ Funding Listed in Order of Cost-Effectiveness
$5,015,301 Available for FY 2025 for the Maricopa County PM-10 Nonattainment Area

Project Number	Agency	Location	Work Type	FY	Length (miles)	Emission Reduction Weighted VOC (kg/day)	Emission Reduction Weighted NOx (kg/day)	Emission Reduction Weighted PM-10 (kg/day)	Emission Reduction Weighted Total (kg/day)	Cost-Effectiveness (CMAQ dollars/ metric ton)	CMAQ Funds Requested
SRP-25-PAVING-003	Salt River Pima-Maricopa Indian Community	Osborn Rd. from Westwood St. to Extension Rd.	Pave unpaved roads	2025	0.25	0	0	22.64	22.64	$1,343	$165,094
SRP-25-PAVING-002	Salt River Pima-Maricopa Indian Community	Jackrabbit Rd. from Dobson Rd. to Longmore Ave. and from Longmore Ave. to Alma School Rd.	Pave unpaved roads	2025	1.0	0	0	59.44	59.44	$1,841	$594,344
SRP-25-PAVING-001	Salt River Pima-Maricopa Indian Community	Clarendon Ave. from Cholla Ln. to Longmore Ave.; Clarendon Ave. from 92nd St. to Dobson Rd.; and Cholla Lane from Indian School Rd to Clarendon Ave.	Pave unpaved roads	2025	1.13	0	0	76.99	76.99	$2,197	$918,433
GLB-25-PAVING-001	Gilbert	Stacey Rd. from Higley Rd. east to 172nd St.	Pave unpaved roads	2025	0.5	0	0	76.62	76.62	$6,362	$2,647,057
										Subtotal	**$4,324,928**
										Amount Available	**$5,015,301**
										Balance	**$690,373**

Applications for Salt River Pima-Maricopa Indian Community indicate paving within four miles of a PM-10 monitor.

ATTACHMENT B

Proposed PM-10 Paving Unpaved Road Projects for FY 2025 CMAQ Funding Listed in Order of PM-10 Reductions
$5,015,301 Available for FY 2025 for the Maricopa County PM-10 Nonattainment Area

Project Number	Agency	Location	Work Type	FY	Length (miles)	Emission Reduction Weighted VOC (kg/day)	Emission Reduction Weighted NOx (kg/day)	Emission Reduction Weighted PM-10 (kg/day)	Emission Reduction Weighted Total (kg/day)	Cost-Effectiveness (CMAQ dollars/ metric ton)	CMAQ Funds Requested
SRP-25-PAVING-001	Salt River Pima-Maricopa Indian Community	Clarendon Ave. from Cholla Ln. to Longmore Ave.; Clarendon Ave. from 92nd St. to Dobson Rd.; and Cholla Lane from Indian School Rd. to Clarendon Ave.	Pave unpaved roads	2025	1.13	0	0	76.99	76.99	$2,197	$918,433
GLB-25-PAVING-001	Gilbert	Stacey Rd. from Higley Rd. east to 172nd St.	Pave unpaved roads	2025	0.5	0	0	76.62	76.62	$6,362	$2,647,057
SRP-25-PAVING-002	Salt River Pima-Maricopa Indian Community	Jackrabbit Rd. from Dobson Rd. to Longmore Ave. and from Longmore Ave. to Alma School Rd.	Pave unpaved roads	2025	1.0	0	0	59.44	59.44	$1,841	$594,344
SRP-25-PAVING-003	Salt River Pima-Maricopa Indian Community	Osborn Rd. from Westwood St. to Extension Rd.	Pave unpaved roads	2025	0.25	0	0	22.64	22.64	$1,343	$165,094
										Subtotal	**$4,324,928**
										Amount Available	**$5,015,301**
										Balance	**$690,373**

Applications for Salt River Pima-Maricopa Indian Community indicate paving within four miles of a PM-10 monitor.

ATTACHMENT C

Proposed PM-10 Paving Unpaved Road Project for FY 2025 CMAQ Funding
$758,932 Available for FY 2025 for the Pinal County PM-10 and PM-2.5 Nonattainment Areas[++]

Project Number	Agency	Location	Work Type	FY	Length (miles)	Emission Reduction Weighted VOC (kg/day)	Emission Reduction Weighted NOx (kg/day)	Emission Reduction Weighted PM-10 (kg/day)	Emission Reduction Weighted Total (kg/day)	Cost Effectiveness (CMAQ dollars/ metric ton)	CMAQ Funds Requested
MAR-23-PAVING-001	City of Maricopa	Murphy Rd. from Gila River Indian Community boundary south 0.76 mile and Hartman Rd. from Gila River Indian Community boundary south 0.51 mile to Honeycutt Rd.	Pave unpaved roads	2025	1.27	0	0	40.80	40.80	$5,402	$1,196,857
										Subtotal	**$1,196,857**
										Amount Available	**$758,932**
										Balance	**($437,925)**

[++] Based on EPA AP-42 emission equation, weighted PM-2.5 emission reductions are 10% of the weighted PM-10 emission reductions.

ATTACHMENT D

Comments Received on Air Quality Applications at the October 12, 2021 MAG Street Committee Meeting

PM-10 Certified Street Sweepers

1. There were no comments.

PM-10 Paving Unpaved Roads

Town of Gilbert GLB-25-PAVING-001: Stacey Rd

1. It was questioned whether the facility is a public road. It was noted that part of the facility is located in an unincorporated part of Maricopa County and that the County has not accepted it into its roadway system for maintenance. In rebuttal, it was noted the land has been dedicated for a road and that the County fully supports the project.

2. It was questioned whether in the future water and sewer lines would need to be added. It was indicated that some sewer lines are in place, but that additional water and sewer lines would be needed in the future.

City of Maricopa MAR-23-PAVING-001: Murphy and Hartman Rd

1. It was asked if future development is anticipated. It was noted that future development on the Gila River Indian Community (GRIC) could increase north-south traffic volumes on Murphy Rd.

2. It was asked if the proposed paving is an interim improvement. It was indicated that it is an interim improvement, but it may be upgraded depending on development to the north on the GRIC.

Salt River Pima-Maricopa Indian Community (SRP-MIC) Project Applications

1. It was asked if the SRP-MIC facilities identified were public roads. It was indicated that the right-of-way for all the facilities were dedicated and recorded as part of the BIA system.

Salt River Pima-Maricopa Indian Community SRP-25-PAVING-001: Clarendon Avenue and Cholla Lane

1. It was asked why one of the roadways identified did not continue a short distance to Dobson Rd. It was indicated that the property owner of the needed right-of-way did not want a roadway in that location.

MARICOPA ASSOCIATION of GOVERNMENTS
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October 21, 2021

TO: Members of the MAG Air Quality Technical Advisory Committee

FROM: Dean Giles, Air Quality Planning Project Manager

SUBJECT: EVALUATION OF PROPOSED CMAQ PROJECTS FOR THE DRAFT FY 2022-2025 MAG TRANSPORTATION IMPROVEMENT PROGRAM

The Maricopa Association of Governments staff has conducted an evaluation of proposed Congestion Mitigation and Air Quality Improvement (CMAQ) projects submitted for the Draft FY 2022-2025 MAG Transportation Improvement Program (TIP). The results of the project evaluations are ranked by cost-effectiveness by modal category in Attachment A. In accordance with the approved MAG Federal Fund Programming Guidelines and Procedures, this information is being presented to the MAG Air Quality Technical Advisory Committee for a possible recommendation to forward the CMAQ evaluation to the MAG Transportation Review Committee and modal committees for use in prioritizing projects. Please refer to the role of the AQTAC in the Congestion Mitigation and Air Quality Improvement Project Evaluation Process in Attachment B.

BACKGROUND

According to the federal Congestion Mitigation and Air Quality Improvement Program Guidance, published November 12, 2013, the purpose of the CMAQ program is to fund transportation projects or programs that will contribute to attainment or maintenance of the national ambient air quality standards for ozone, carbon monoxide, and particulate matter. A description of the project categories contained in federal CMAQ guidance, as well as general activities and projects eligible for CMAQ funding is provided in Attachment C.

On August 2, 2021, MAG announced a Call for Projects for Federal Highway Administration suballocated CMAQ from member agencies in Maricopa and Pinal counties. During the call for projects the MAG member agencies are requested, through the MAG Management Committee, the Transportation Review Committee, and modal committees, to submit project requests for federal funding. The program areas and estimated federal CMAQ funds available are provided below.

- An estimated $9,481,165 in FY 2025 CMAQ funding is available for Bicycle and Pedestrian Projects. An additional $4,506,798 in Transportation Alternative Program funding is available for FY 2025. It is anticipated that the MAG Active Transportation Committee will review scores and recommend priority listings on November 16, 2021.

- An estimated $12,052,165 in FY 2023 CMAQ funding is available for Transportation Systems Management and Operations Projects. An additional $10,700,000 in CMAQ funding is available for FY 2024. It is anticipated that the MAG Intelligent Transportation Systems Committee will review scores and recommend priority listing on December 1, 2021.

The deadline for submitting project applications was September 17, 2021. Overall, MAG evaluated 17 Bicycle and Pedestrian Projects and 31 Transportation Systems Management and Operations projects.

The February 2021 MAG CMAQ Methodologies, were utilized to estimate the emission reduction benefits of the proposed CMAQ projects. All CMAQ projects were evaluated for their estimated emission reduction benefits and cost-effectiveness utilizing these methodologies. The CMAQ methodologies involve the estimation of the total daily weighted emissions reduction of PM-10, nitrogen oxides (NOx), and volatile organic compounds (VOC) expressed in kilograms per day, and the cost-effectiveness of each project, measured in CMAQ dollars per metric ton of total annual emissions reduced. The Environmental Protection Agency MOVES3 emission model was used to estimate emission factors for NOx, VOC, and PM-10 exhaust, tire wear, and brake wear for the year of project implementation. The emission factors from EPA AP-42 were used to estimate reentrained PM-10 emissions from vehicles traveling on paved and unpaved roads.

Attachment A provides the results of the project evaluation ranked by cost-effectiveness within each modal category by the year requested by the member agency. It is important to note that many of the proposed projects support committed control measures contained in the MAG air quality plans. It is anticipated that these projects will be reviewed and ranked by the modal committees and then forwarded to the Transportation Review Committee.

Following review of the CMAQ evaluation by the MAG Air Quality Technical Advisory Committee, it is anticipated that the Committee may make a possible recommendation to forward the CMAQ evaluation to the modal committees and MAG Transportation Review Committee for use in prioritizing projects. The Transportation Review Committee will be requested to recommend a fiscally constrained list of projects for federal funding

to the MAG Management Committee for inclusion in the Draft FY 2022-2025 MAG Transportation Improvement Program.

If you have any questions, please contact me at 602-452-5013.

Attachments

ATTACHMENT A

Table 1 – Evaluation of Proposed Bicycle and Pedestrian Projects for FY 2025 Sorted by Cost-Effectiveness

In the November 12, 2013 CMAQ Guidance, the construction of Bicycle and Pedestrian Facilities and Programs that are not exclusively recreational and reduce vehicle trips are eligible under category #7.

Project Number	Agency	Location	Work Type	FY	Project Length (miles)	Emission Reduction Weighted VOC (kg/day)	Emission Reduction Weighted NOx (kg/day)	Emission Reduction Weighted PM10 (kg/day)	Emission Reduction Weighted Total (kg/day)	Cost Effectiveness (CMAQ dollars/ metric ton)	CMAQ Funds Requested
APJ-22-BPB-001	Apache Junction	Tomahawk Rd. from US60 to Southern Ave. and Southern Ave. from Winchester Rd. to Tomahawk Rd.	Infill of curb & gutter and sidewalk.[2,3]	2025	1.0	0.001	0.001	0.83	0.83	$250,659	$1,494,280
CHN-22-BPB-003	Chandler	Ashley Trail at Cooper Rd. to the Paseo Trail bridge at Galveston St.	Shared use path.[1,3]	2025	0.1	0.01	0.01	0.07	0.09	$871,429	$604,362
GLN-22-BPB-002	Glendale	Area from Maryland Ave. to Bethany Home Rd. and 43rd Ave. to 59th Ave.	Sidewalk and bicycle lanes.[1,3]	2025	1.83	0.03	0.03	0.14	0.20	$1,212,164	$1,316,478
GLN-22-BPB-001	Glendale	Area from Bethany Home Rd. to Missouri Ave. and 55th Ave. to 61st Ave, extending along Missouri Ave. from 55th Ave. to 51st Ave.	Sidewalk and bicycle lanes.[1,3]	2025	2.71	0.04	0.04	0.21	0.29	$1,267,405	$2,064,708
CHN-22-BPB-001	Chandler	Kyrene Branch Canal, from Kyrene and Knox Rds. to Linda Ln. and Highline Canal from Knox Rd. to Linda Ln. Orchid Ln. from Highline Canal to 56th St. and 54th St. from Orchid Ln. to Ray Rd.	Shared use path and bicycles lanes.[1,3]	2025	1.9	0.05	0.05	0.30	0.40	$1,414,834	$3,073,176

ATTACHMENT A

Table 1 – Evaluation of Proposed Bicycle and Pedestrian Projects for FY 2025 Sorted by Cost-Effectiveness (continued)

In the November 12, 2013 CMAQ Guidance, the construction of Bicycle and Pedestrian Facilities and Programs that are not exclusively recreational and reduce vehicle trips are eligible under category #7.

Project Number	Agency	Location	Work Type	FY	Project Length (miles)	Emission Reduction Weighted VOC (kg/day)	Emission Reduction Weighted NOx (kg/day)	Emission Reduction Weighted PM10 (kg/day)	Emission Reduction Weighted Total (kg/day)	Cost Effectiveness (CMAQ dollars/ metric ton)	CMAQ Funds Requested
QNC-22-BPB-001	Queen Creek	From the west side of the Rittenhouse Road Bridge to the north side of the Meridian Road Bridge, continuing south along Meridian Rd. to the north side of the Olive Mill entrance.	Shared use path.[1,3]	2025	1.35	0.01	0.01	0.04	0.06	$2,147,544	$859,299
SCT-22-BPB-002	Scottsdale	Central Arizona Project Canal/Frank Lloyd Wright Boulevard from Scottsdale Rd. to Northsight Blvd.	Shared use path.[1,3]	2025	1.7	0.02	0.02	0.08	0.12	$2,583,828	$2,091,783
SCT-22-BPB-001	Scottsdale	Indian Bend Wash north of Central Arizona Project Canal.	Shared use path.[1,3]	2025	0.6	0.01	0.01	0.05	0.07	$3,067,782	$1,599,175
MES-22-BPB-001	Mesa	Eastern Canal: Brown Rd. to Broadway Rd.	Shared use path.[1,3]	2025	2.5	0.02	0.02	0.10	0.14	$3,116,832	$3,175,741
PHX-22-BPB-002	Phoenix	3rd St from Lincoln St. to Yuma St. and then on-street and off-street connections passing through University Dr. and connecting into the MUP (North overbank trail) of the Rio Salado.	Shared use path, sidewalk and bicycle lanes.[1,3]	2025	1.4	0.03	0.03	0.13	0.19	$3,297,844	$3,402,560

ATTACHMENT A

Table 1 – Evaluation of Proposed Bicycle and Pedestrian Projects for FY 2025 Sorted by Cost-Effectiveness (continued)

In the November 12, 2013 CMAQ Guidance, the construction of Bicycle and Pedestrian Facilities and Programs that are not exclusively recreational and reduce vehicle trips are eligible under category #7.

Project Number	Agency	Location	Work Type	FY	Project Length (miles)	Emission Reduction Weighted VOC (kg/day)	Emission Reduction Weighted NOx (kg/day)	Emission Reduction Weighted PM10 (kg/day)	Emission Reduction Weighted Total (kg/day)	Cost Effectiveness (CMAQ dollars/ metric ton)	CMAQ Funds Requested
TMP-22-BPB-001	Tempe	College Ave. and University Dr. at Arizona State University.	Shared use path underpass.[1,3]	2025	0.25	0.02	0.02	0.11	0.15	$3,807,846	$5,581,673
PVY-22-BPB-001	Paradise Valley	56th St. from Mockingbird Lane to Doubletree Ranch Rd.	Detached meandering sidewalk.[3]	2025	0.5	0.004	0.003	0.01	0.02	$5,556,808	$525,142
GLB-22-BPB-001	Gilbert	Marathon Trail at Pecos Rd.	Grade separated trail crossing improvement.[1,3]	2025	18.5	0.002	0.002	0.01	0.01	$5,702,005	$535,496
GLB-22-BPB-002	Gilbert	Marathon Trail at Higley Rd.	Grade separated trail crossing improvement.[1,3]	2025	18.5	0.001	0.001	0.01	0.01	$5,761,623	$541,095
GLB-22-BPB-003	Gilbert	Marathon Trail at Power Rd. and Guadalupe Rd.	Grade separated trail crossing improvement.[1,3]	2025	18.5	0.002	0.002	0.01	0.01	$6,524,627	$1,225,503
PHX-22-BPB-003	Phoenix	20th St. from Highland Ave. to Missouri Ave.	Buffered bicycle lanes improvement.[1]	2025	0.7	0.003	0.003	0.02	0.03	$12,985,421	$1,410,289
CHN-22-BPB-002	Chandler	Ocotillo Rd. from Price Rd. to the Paseo Trail.	Improvement to existing shared use path.[1,3]	2025	2.86	0.002	0.002	0.01	0.01	$69,338,710	$4,960,603

ATTACHMENT A

Table 2 – Evaluation of Proposed Transportation Systems Management and Operations Projects for FY 2023 Sorted by Cost-Effectiveness

In the November 12, 2013 CMAQ Guidance, the construction of Congestion Reduction and Traffic Flow Improvements, including Intelligent Transportation Systems projects are eligible under Category #3.

Project Number	Agency	Location	Work Type	FY	Project Length (miles)	Emission Reduction Weighted VOC (kg/day)	Emission Reduction Weighted NOx (kg/day)	Emission Reduction Weighted PM10 (kg/day)	Emission Reduction Weighted Total (kg/day)	Cost Effectiveness (CMAQ dollars/ metric ton)	CMAQ Funds Requested
B2_PHX23_SMO_002	Phoenix	Citywide	Procure and install 40 CCTV cameras and 100 ARID devices.[4]	2023	80.0	11.85	22.83	24.46	59.14	$10,530	$1,041,072
B2_GLB_23_SMO_001	Gilbert	Citywide	Purchase SMP database software to utilize data gathered from video detection cameras. Connect to 83 intersections fully configured for SPM. Includes the 63 intersections which will be upgraded and configured for SPM prior to this project and the upgrade of detection and configuration of an additional 20 intersections as part of this project.[4]	2023	55.0	3.23	5.55	7.96	16.74	$24,348	$680,932
B2_SCT23_SMO_001	Scottsdale	Scottsdale Rd.	Purchase and install advanced traffic signal detection system and cabinets at various signalized intersections along Scottsdale Rd. and Couplets to replace the existing loop detectors.[4]	2023	16.0	1.71	2.83	4.93	9.47	$86,286	$1,366,407
B1_CHN23_SMO_001	Chandler	SR101/Price Rd: SR202 to Germann Rd; Dobson Rd: SR202 to Germann Rd; Alma School	Install video detection systems (16 intersections) and communication equipment (six locations) to provide efficient bicycle and vehicle detection and reliable communication systems.[4]	2023	7.0	0.34	0.58	0.85	1.77	$169,105	$499,790

ATTACHMENT A

Table 2 – Evaluation of Proposed Transportation Systems Management and Operations Projects for FY 2023 Sorted by Cost-Effectiveness (continued)

In the November 12, 2013 CMAQ Guidance, the construction of Congestion Reduction and Traffic Flow Improvements, including Intelligent Transportation Systems projects are eligible under Category #3.

Project Number	Agency	Location	Work Type	FY	Project Length (miles)	Emission Reduction Weighted VOC (kg/day)	Emission Reduction Weighted NOx (kg/day)	Emission Reduction Weighted PM10 (kg/day)	Emission Reduction Weighted Total (kg/day)	Cost Effectiveness (CMAQ dollars/ metric ton)	CMAQ Funds Requested
		Rd: SR202 to Germann Rd; Cooper Rd: SR202 to Germann Rd; Germann Rd: Airport Blvd (Paseo Trail Crossing) to Stearmann Dr.									
B1_GLB23_SMO_003	Gilbert	Citywide	Upgrade of ten CCTV cameras and upgrade of detection at 20 intersections to video detection cameras that provide turning movement counts. Configuration of these cameras for SPM data collection.[4]	2023	19.0	0.26	0.45	0.64	1.35	$264,232	$596,165
B1_PHX23_SMO_001	Phoenix	Deer Valley Rd. from 7th Ave. to 7th St.; 7th St. from Deer Valley Rd. to Greenway Pkwy.	Install conduit, pull boxes, fiber, splice closures, ethernet switches, node cabinet, load center cabinet, termination panel, and layer 3 network switch.[4]	2023	4.5	0.59	1.29	1.41	3.29	$272,460	$1,494,374

ATTACHMENT A

Table 2 – Evaluation of Proposed Transportation Systems Management and Operations Projects for FY 2023 Sorted by Cost-Effectiveness (continued)

In the November 12, 2013 CMAQ Guidance, the construction of Congestion Reduction and Traffic Flow Improvements, including Intelligent Transportation Systems projects are eligible under Category #3.

Project Number	Agency	Location	Work Type	FY	Project Length (miles)	Emission Reduction Weighted VOC (kg/day)	Emission Reduction Weighted NOx (kg/day)	Emission Reduction Weighted PM10 (kg/day)	Emission Reduction Weighted Total (kg/day)	Cost Effectiveness (CMAQ dollars/ metric ton)	CMAQ Funds Requested
B3_CHN23_SMO_002	Chandler	Price Rd.: Innovation St. to Dobson Rd.; Ellis St. at Queen Creek Rd.; Dobson Rd..: Queen Creek Rd. to Ocotillo Rd.; Alma School: Ocotillo Rd. to Chandler Heights Rd.	Install video detection systems and communication equipment to provide efficient bicycle and vehicle detection and reliable communication systems.[4]	2023	4.5	0.15	0.26	0.41	0.82	$276,165	$380,029
B2_GDY23_SMO_002	Goodyear	Yuma Rd. - Sarival Ave. to 143rd Ave.	Upgrade video detection, traffic signal controllers and install vehicle travel time hardware at five intersections.[4]	2023	2.4	0.08	0.14	0.22	0.44	$279,138	$209,818
B3_BKY23_SMO_003	Buckeye	Indian School Rd. & Jack Rabbit Trl. to Indian School Rd. & West Sunrise Ln.	Install conduit, fiber, pull boxes, vaults and splices along Indian School Rd. to connect the six traffic signals along the corridor and establish an ITS backbone.[4]	2023	1.6	0.04	0.08	0.09	0.21	$308,538	$106,700

ATTACHMENT A

Table 2 – Evaluation of Proposed Transportation Systems Management and Operations Projects for FY 2023 Sorted by Cost-Effectiveness (continued)

In the November 12, 2013 CMAQ Guidance, the construction of Congestion Reduction and Traffic Flow Improvements, including Intelligent Transportation Systems projects are eligible under Category #3.

Project Number	Agency	Location	Work Type	FY	Project Length (miles)	Emission Reduction Weighted VOC (kg/day)	Emission Reduction Weighted NOx (kg/day)	Emission Reduction Weighted PM10 (kg/day)	Emission Reduction Weighted Total (kg/day)	Cost Effectiveness (CMAQ dollars/ metric ton)	CMAQ Funds Requested
B1_GDY23_SMO_001	Goodyear	Van Buren St. - SR303 to 143rd Ave.	Upgrade video detection, traffic signal controllers and install vehicle travel time hardware at six intersections.[4]	2023	3.5	0.14	0.23	0.34	0.71	$312,360	$368,713
B3_GLB23_SMO_004	Gilbert	Citywide	Update of ten CCTV cameras and upgrade of detection at 20 intersections to video detection cameras that provide turning movement counts. Configuration of these cameras for SPM data collection.[4]	2023	17.0	0.21	0.36	0.52	1.09	$332,899	$603,855
B2_GDY23_SMO_004	Goodyear	Cotton Ln.: Yuma Rd. to Lilac St.	Upgrade video detection, traffic signal controllers and install vehicle travel time hardware at three intersections[4].	2023	0.5	0.02	0.05	0.06	0.13	$395,273	$87,228
B1_GDY23_SMO_003	Goodyear	Indian School Rd.: Minnezona Ave. to Sarival Ave.	Upgrade video detection, traffic signal controllers and install vehicle travel time hardware at five intersections.[4]	2023	1.5	0.05	0.11	0.13	0.29	$406,840	$192,844
B2_PHX23_SMO_003	Phoenix	McDowell Rd.; 91st Ave.	Install conduit, pull boxes, fiber, splice closures, and ethernet switches[4].	2023	4.0	0.30	0.69	0.73	1.72	$416,372	$1,201,020
B2_GLB23_SMO_002	Gilbert	Citywide	Upgrade of ten CCTV cameras and upgrade of detection at 23 intersections to video detection	2023	11.75	0.17	0.30	0.43	0.90	$452,116	$679,708

ATTACHMENT A

Table 2 – Evaluation of Proposed Transportation Systems Management and Operations Projects for FY 2023 Sorted by Cost-Effectiveness (continued)

In the November 12, 2013 CMAQ Guidance, the construction of Congestion Reduction and Traffic Flow Improvements, including Intelligent Transportation Systems projects are eligible under Category #3.

Project Number	Agency	Location	Work Type	FY	Project Length (miles)	Emission Reduction Weighted VOC (kg/day)	Emission Reduction Weighted NOx (kg/day)	Emission Reduction Weighted PM10 (kg/day)	Emission Reduction Weighted Total (kg/day)	Cost Effectiveness (CMAQ dollars/ metric ton)	CMAQ Funds Requested
			cameras that provide turning movement counts. Configuration of the cameras for SPM.[4]								
B2_MMA23_SMO_001	MCDOT	Peoria, Glendale, Maricopa County	On 7 REACT vehicles, install CCTV cameras (on 5 vehicles currently lacking cameras), smart board technology upgrades (1 per vehicle), and smart cone technology (2 per vehicle). Integrate CCTV and smart device data into RADS to support traveler information dissemination about arterial incidents and detour routing supported by REACT. Support 3 years of NextGen REACT operations primarily within the cities of Glendale and Peoria.[4]	2023	181.0	0.08	0.15	0.19	0.42	$812,719	$566,732
B3_AVN23_SMO_002	Avondale	Indian School Road from Old Litchfield Road to El Mirage Road	This project will design and construct conduit and fiber optic infrastructure improvements. New conduit installation including laterals and new vaults will be required to extend the existing fiber optic communications on Dysart to the traffic signal vaults at each signalized intersection.[4]	2023	2.1	0.11	0.24	0.27	0.62	$1,065,263	$1,107,425

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Table 2 – Evaluation of Proposed Transportation Systems Management and Operations Projects for FY 2023 Sorted by Cost-Effectiveness (continued)

In the November 12, 2013 CMAQ Guidance, the construction of Congestion Reduction and Traffic Flow Improvements, including Intelligent Transportation Systems projects are eligible under Category #3.

Project Number	Agency	Location	Work Type	FY	Project Length (miles)	Emission Reduction Weighted VOC (kg/day)	Emission Reduction Weighted NOx (kg/day)	Emission Reduction Weighted PM10 (kg/day)	Emission Reduction Weighted Total (kg/day)	Cost Effectiveness (CMAQ dollars/ metric ton)	CMAQ Funds Requested
B3_BKY23_SMO_004	Buckeye	Eason Avenue & MC 85 to Miller Road (1st Street) & Monroe Road	Install conduit, fiber, pull boxes, vaults and splices along MC 85 to connect the 5 traffic signals along the corridor and establish an ITS backbone.[4]	2023	1.1	0.03	0.06	0.06	0.15	$1,384,805	$337,036
B1_GLB23_SMO_005	Gilbert	Gilbert, as a pilot for the region.	Transfer Gilbert and MAG RCN existing information to a new modern platform that will allow for better access and records retention along with means to understand and disseminate information. While the majority of the project resides within Gilbert, the focus is that this mapping software and process becomes a template for future projects. In which other municipalities map their fiber network and connect it to the mapped RCN.	2023	0	0.03	0.08	0.08	0.19	$1,516,530	$471,500
B3_AVN23_SMO_001	Avondale	Citywide	Replace EVP components at all applicable approaches of the intersections and upgrade the cabinet with the new EVP cards.	2023	18.6	0.0002	0.002	0.0001	0.002	$75,729,351	$277,133

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Table 3 – Evaluation of Proposed Transportation Systems Management and Operations Projects for FY 2024 Sorted by Cost Effectiveness

In the November 12, 2013 CMAQ Guidance, the construction of Congestion Reduction and Traffic Flow Improvements, including Intelligent Transportation Systems projects are eligible under Category #3.

Project Number	Agency	Location	Work Type	FY	Project Length (miles)	Emission Reduction Weighted VOC (kg/day)	Emission Reduction Weighted NOx (kg/day)	Emission Reduction Weighted PM10 (kg/day)	Emission Reduction Weighted Total (kg/day)	Cost Effectiveness (CMAQ dollars/ metric ton)	CMAQ Funds Requested
B2_SCT24_SMO_002	Scottsdale	Scottsdale Rd and Frank Lloyd Wright/Bell Rd.	Purchase and install four-section flashing yellow arrow heads at 49 signalized intersections. Consider to enable protected/permissive left turn operations during night-time, potentially mid-day and weekends to reduce traffic delays.	2024		0.18	1.73	0.06	1.97	$72,221	$770,903
B2_TMP24_SMO_001	Tempe	Citywide	Replace outdated and out-of-warranty backbone and edge switching equipment with new high-bandwidth equipment. Review and rearchitect the existing fiber and wireless networks. Existing fiber splicing will be reexamined, as well as the addition of mid-level switches and modification of network.[4]	2024	50.0	0.85	2.17	2.26	5.28	$84,434	$744,970
B1_MMA24_SMO_003	MCDOT	West Valley - 16 intersections	Implement adaptive traffic signal system around the major entertainment and event venues of the west valley to enable real-time adjustments to signal operations during ICM and special events to respond to traffic conditions, including conditions resulting from parking operations. Reduce delays and	2024	14.0	1.34	2.88	3.49	7.71	$90,843	$1,169,825

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Table 3 – Evaluation of Proposed Transportation Systems Management and Operations Projects for FY 2024 Sorted by Cost Effectiveness (continued)

In the November 12, 2013 CMAQ Guidance, the construction of Congestion Reduction and Traffic Flow Improvements, including Intelligent Transportation Systems projects are eligible under Category #3.

Project Number	Agency	Location	Work Type	FY	Project Length (miles)	Emission Reduction Weighted VOC (kg/day)	Emission Reduction Weighted NOx (kg/day)	Emission Reduction Weighted PM10 (kg/day)	Emission Reduction Weighted Total (kg/day)	Cost Effectiveness (CMAQ dollars/ metric ton)	CMAQ Funds Requested
			improve travel time during event ingress and egress and any impacts of arterial or freeway incidents that occur simultaneously with special events. Installation of a distributed adaptive signal control technology (ASCT) system that is all inclusive of necessary hardware, other performance metric monitoring systems, and ASCT software.[4]								
B3_PHX24_SMO_004	Phoenix	Downtown area	Procure and install 6 new dynamic message signs. Procure and install 7 lane control signs to replace existing signs. Upgrade software to integrate the DTMS infrastructure with the TransSuite system. Procure and install 2.5 miles of fiber communications infrastructure.[4]	2024	8.0	1.45	2.61	2.27	6.33	$138,465	$1,465,764
B3_SUR24_SMO_001	Surprise	Citywide at 57 intersections.	Procurement of network switches and Node Cabinets.[4]	2024	9.0	0.26	0.49	0.80	1.55	$159,993	$414,958
B2_MMA24_SMO_002	MCDOT	Regionwide	1. Integrating all available turning movement count data from local agencies into RADS and allowing for	2024	75.9	0.35	0.75	0.97	2.07	$162,526	$562,075

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Table 3 – Evaluation of Proposed Transportation Systems Management and Operations Projects for FY 2024 Sorted by Cost Effectiveness (continued)

In the November 12, 2013 CMAQ Guidance, the construction of Congestion Reduction and Traffic Flow Improvements, including Intelligent Transportation Systems projects are eligible under Category #3.

Project Number	Agency	Location	Work Type	FY	Project Length (miles)	Emission Reduction Weighted VOC (kg/day)	Emission Reduction Weighted NOx (kg/day)	Emission Reduction Weighted PM10 (kg/day)	Emission Reduction Weighted Total (kg/day)	Cost Effectiveness (CMAQ dollars/ metric ton)	CMAQ Funds Requested
			continuous collection of the data. 2. Configuring detection within the ATSPM platform for all of the intersections within the 12 corridors included in the PI Book. 3. Configuring a MARK-1 dashboard for 12 corridors and developing a new performance report for turning movement counts within the ATSPM platform. 4. Providing upgrades to RADS (and subsequently to ARIS) to integrate and use the new arterial turning movement count data as part of incident notification and response.[4]								
B3_QNC24_SMO_001	Queen Creek	Town limits North of Ocotillo Rd.	Installation of fiber optic cabling infrastructure in existing conduit. Upgrading 13 CCTV cameras.[4]	2024	5.15	0.20	0.38	0.60	1.18	$352,602	$692,539
B3_QNC24_SMO_002	Queen Creek	Town limits South of Ocotillo Rd.	Installation of fiber optic cabling infrastructure in existing conduit. Adding ARID devices at 38 intersections.[4]	2024	5.15	0.17	0.32	0.51	1.00	$463,486	$774,014
B3_PEO24_SMO_001	Peoria	Deer Valley Rd. from 107th	Procurement, installation, and integration of a distributed adaptive signal control technology (ASCT)	2024	3.5	0.12	0.22	0.35	0.69	$583,088	$670,662

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Table 3 – Evaluation of Proposed Transportation Systems Management and Operations Projects for FY 2024 Sorted by Cost Effectiveness (continued)

In the November 12, 2013 CMAQ Guidance, the construction of Congestion Reduction and Traffic Flow Improvements, including Intelligent Transportation Systems projects are eligible under Category #3.

Project Number	Agency	Location	Work Type	FY	Project Length (miles)	Emission Reduction Weighted VOC (kg/day)	Emission Reduction Weighted NOx (kg/day)	Emission Reduction Weighted PM10 (kg/day)	Emission Reduction Weighted Total (kg/day)	Cost Effectiveness (CMAQ dollars/ metric ton)	CMAQ Funds Requested
		Ave. to 79th Ave.	system and associated travel time system hardware installed into existing traffic signal controller cabinets which utilize existing communications infrastructure to link the intersections.[4]								
B3_BKY24_SMO_001	Buckeye	I-10 & Watson to Watson & Southern	Install conduit, fiber, pull boxes, vaults and splices along Watson Rd. to connect the six traffic signals along the corridor and establish an ITS backbone.[4]	2024	3.6	0.09	0.22	0.25	0.56	$1,109,834	$1,046,004
B2_BKY24_SMO_002	Buckeye	I-10 & Miller Rd. to Miller Rd. & MC 85	Install conduit, fiber, pull boxes, vaults and splices along Miller Road to connect the nine traffic signals along the corridor and establish an ITS backbone.[4]	2024	4.4	0.06	0.15	0.17	0.38	$1,595,614	$1,028,476

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Notes:

[1]Supports the TCM in the Serious Area PM-10 Plan and CO Maintenance Plan: "Development of Bicycle Travel Facilities"

[2]These projects also include curb and gutter work, which supports the measure in the Serious Area PM-10 Plan: "Curbing, Paving or Stabilizing Shoulders on Paved Roads"

[3]Supports the TCM in the Serious Area PM-10 Plan and CO Maintenance Plan: "Encouragement of Pedestrian Travel"

[4]Supports the TCMs in the Serious Area PM-10 Plan and CO Maintenance Plan: "Coordinate Traffic Signal Systems" and "Develop Intelligent Transportation Systems".

ROLE OF THE MAG AIR QUALITY TECHNICAL ADVISORY COMMITTEE IN THE CONGESTION MITIGATION AND AIR QUALITY IMPROVEMENT (CMAQ) PROJECT EVALUATION PROCESS

CMAQ Projects for the Transportation Improvement Program

- Forward the evaluation of proposed CMAQ projects for the MAG Transportation Improvement Program to the MAG Transportation Review Committee and modal committees for use in prioritizing projects.

Sequence of Committee Actions: Air Quality Technical Advisory Committee, Transportation Review Committee and Modal Technical Advisory Committees, Management Committee, Regional Council.

PM-10 Certified Street Sweeper Projects

- Recommend a prioritized list of proposed PM-10 Certified Street Sweeper Projects for CMAQ funding and retain the prioritized list for any additional CMAQ funds that may become available due to year-end closeout, including redistributed obligation authority, or additional funding received by this region.

Sequence of Committee Actions: Air Quality Technical Advisory Committee, Management Committee, Regional Council.

Paving Unpaved Road Projects

- Rank the proposed Paving Unpaved Road Projects for CMAQ funding and forward to the MAG Transportation Review Committee.

Sequence of Committee Actions: Air Quality Technical Advisory Committee, Transportation Review Committee, Management Committee, Regional Council.

The Congestion Mitigation and Air Quality (CMAQ) Improvement Program Under the Moving Ahead for Progress in the 21st Century Act

INTERIM PROGRAM GUIDANCE

November 12, 2013

I. INTRODUCTION

The Congesting Mitigation and Air Quality Improvement Program (CMAQ) was created under the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991[1], and reauthorized under the Transportation Equity Act for the 21st Century (TEA-21)[2], the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)[3], and, most recently, the Moving Ahead for Progress in the 21st Century Act (MAP-21).[4] Through Fiscal Year (FY) 2012, the CMAQ program has supported nearly 28,000 transportation projects across the country, accounting for nearly $30 billion in transportation investments since its inception in 1992.

This guidance replaces the October 2008 edition and provides information on the CMAQ program, including:

- Authorization levels and apportionment changes specific to the MAP-21
- Flexibility and transferability provisions available to States
- Geographic area eligibility for CMAQ funds
- Project eligibility information
- Project selection processes
- Program administration
- Annual reporting
- Performance management

The guidance has been prepared by the Air Quality and Transportation Conformity Team in Federal Highway Administration's (FHWA) Office of Natural Environment, in cooperation with the Federal Transit Administration's (FTA) Office of Planning and Environment.

II. PROGRAM PURPOSE

The purpose of the CMAQ program is to fund transportation projects or programs that will contribute to attainment or maintenance of the National Ambient Air Quality Standards (NAAQS) for ozone, carbon monoxide (CO), and particulate matter (both PM_{10} and $PM_{2.5}$).[5]

The CMAQ program supports two important goals of the U.S. Department of Transportation (Department): *improving air quality and relieving congestion*. While these goals are not new elements of the program, they were strengthened in the SAFETEA-LU and further bolstered in provisions added to the MAP-21.

[1] Sec. 1008, Pub. L. 102-240 (December 18, 1991).
[2] Sec. 1110, Pub. L. 105-178 (June 9, 1998),
[3] Sec. 1808, Pub. L. 109-59 (August 10, 2005).
[4] Sec. 1113, Pub. L. 112-141, (July 6, 2012).
[5] PM_{10} refers to particulate matter 10 microns or less in diameter; $PM_{2.5}$ refers to 2.5 microns or less.

Reducing pollution and other adverse environmental effects of transportation projects and transportation system inefficiency have been long-standing objectives of the Department. The strategic plans for the Department and for the FHWA both include initiatives specifically focused on reducing air pollution from transportation sources. The CMAQ program provides funding for a broad array of tools to accomplish these goals. By choosing to fund or sponsor a CMAQ project, a State or local government, transit agency, or other eligible project sponsor can improve air quality and make progress toward achieving attainment status and ensuring compliance with the transportation conformity provisions of the Clean Air Act (CAA).[6]

Growing highway congestion continues to rise at a faster rate than transportation investments. Reducing congestion is a key objective of the Department, and one that has gathered increasing importance in the past several years. The costs of congestion can be an obstacle to economic activity. In addition, congestion can hamper quality of life through diminished air quality, lost personal time, and other negative factors.

Since some congestion relief projects also reduce idling, the negative emissions impacts of "stop and go" driving, and the number of vehicles on the road, they have a corollary benefit of improving air quality. Based on their emissions reductions, these types of projects are eligible for CMAQ funding. The Department believes State and local governments can simultaneously reduce the costly impacts of congestion while also improving air quality.

III. AUTHORIZATION LEVELS UNDER THE MAP-21

A. Authorization Levels

The MAP-21 covers FY 2013 and FY 2014. Total apportioned Federal-aid highway program authorization is $37.40 billion for FY 2013 and just under $37.8 billion for FY 2014.[7] Table 1 shows the MAP-21 CMAQ levels by fiscal year. The CMAQ funds will be apportioned to States each year based upon a modified process established in the legislation and codified at 23 U.S.C. 104 (See Section V discussion of Apportionment).

[6] 42 U.S.C. 7506 (Section 176(c) of the CAA). The CAA (42 U.S.C. 7401–7671q) consists of Pub. L. 84-159, 69 Stat. 322 (July 14, 1955); and subsequent amendments.

[7] Sec. 1101, Pub. L. 112-141 (July 6, 2012). Section 149(m) of title 23, United States Code, states that "[a] State may obligate funds apportioned under section 104(b)(2) [of Title 23] . . . ." FHWA has interpreted the reference to section 104(b)(2), which is the Surface Transportation Program, as a drafting error. Under prior law, section 104(b)(2) was the funding authorization for the CMAQ program, and MAP-21 placed CMAQ funding in section 104(b)(4). The FHWA intends to apply section 149(m) as though the reference read "funds apportioned under section 104(b)(4) . . . ."

TABLE 1

MAP-21 CMAQ LEVELS	
Fiscal Year	**Amount**
FY 2013	$2.20 Billion (actual)
FY 2014	$2.23 Billion (estimated)

B. Transferability of CMAQ Funds

Since transportation and environmental program priorities fluctuate, States have been able to transfer a limited amount of their CMAQ apportionment. The MAP-21 changed the transfer provisions for CMAQ considerably, as the legislation amended 23 U.S.C. 126, *Uniform transferability of Federal-aid highway funds.*[8] Prior to MAP-21, State transfer of CMAQ funds to other elements of the Federal-aid highway program was subject to a specific statutory process that served to limit such annual transfer flexibility to approximately 20 percent of a State's overall CMAQ funds (the percentage varied somewhat by State). Through MAP-21, the unique transfer process required for CMAQ has been removed, and the standard provisions of 23 U.S.C. 126 now apply, i.e. subject to certain adjustments, up to 50 percent of apportioned program funds can be transferred each year from program funds eligible for transfer. For CMAQ, the apportioned funds eligible for transfer will not include the statutory $PM_{2.5}$ priority set-aside, which is discussed later in the guidance (Section V.C.). This interpretation gives meaning to both the statutory transfer language in Section 126 and to the $PM_{2.5}$ priority established by Congress in 23 U.S.C. 149(k). This safeguarding of $PM_{2.5}$ set-aside funds from transfer does not affect the ability of a State to transfer up to 50 percent of its CMAQ funds to another apportioned program.

The FHWA's Chief Financial Officer will issue a detailed memorandum covering these and other transfer provisions encompassing the full Federal-aid highway program, including guidance on program-specific transfer requirements, limitations, process and logistics, and other factors associated with Federal-aid transfer.

IV. COST-EFFECTIVENESS AND PRIORITY USE OF CMAQ FUNDS

The SAFETEA-LU directed States and Metropolitan Planning Organizations (MPOs) to give priority to cost-effective projects, including diesel retrofits and congestion-mitigation efforts that also produced an air quality benefit. The MAP-21 continues and expands the focus on efficiency and cost-effective project selection.[9] The new legislation also calls for the Department, in consultation with the Environmental Protection Agency (EPA), to develop a series of graphs or tables that illustrate the cost-effectiveness of a cross section of

[8] 23 U.S.C. 126(a), as amended by Sec. 1509, Pub. L. 112-141 (July 6, 2012).
[9] 23 U.S.C. 149(g), as amended by Sec. 1113(b)(5), Pub. L. 112-141 (July 6, 2012).

eligible project types.[10] These tables are intended to inform States, MPOs, and other project sponsors on the air quality benefits derived from a variety of project types compared to the investment required. The tables are intended to be a resource for State and local planners as they consider CMAQ investments and the emissions reduction needs in the areas covering their programs.

A number of other resources are available to assist with development of the cost-effectiveness tables. In 2009, the FHWA published *SAFETEA-LU 1808: CMAQ Evaluation and Assessment*,[11] a two-phase progress report on the program that was required by Section 1808 of the legislation. The EPA released a guidance document, *The Cost Effectiveness of Heavy-Duty Diesel Retrofits and Other Mobile Source Emission Reduction Projects and Programs*,[12] which provides cost-effectiveness data on diesel engine retrofit technologies and other CMAQ-eligible activities. In addition, the Transportation Research Board published *The Congestion Mitigation and Air Quality Improvement Program: Assessing 10 Years of Experience*[13] in 2002, providing estimates of costs, changes in vehicle miles travelled (VMT), emission reductions, and other benefits. Private industry provides a variety of other cost-effectiveness studies and graphics that focuses on specific service sectors, such as heavy-duty diesel equipment, alternative fuels, and others.

While no single cost-effectiveness document or table is required to establish State or local programs, project selection should reflect the positive cost-effectiveness relationships highlighted in these guidance documents. State and local transportation programs that implement a broad array of these cost-effective measures may record a more rapid rate of progress toward their clean air goals, since many of these endeavors generate immediate benefits. Local procedures that elevate the importance of these efforts in project selection—and rate them accordingly—may accelerate the drive to air quality attainment. Based on MAP-21, States and other sponsors are expected to record cost-effectiveness analyses in their CMAQ annual reports to the extent they have been providing such information.[14]

In addition to the MAP-21 priority on cost-effectiveness, Section 176(c) of the CAA requires that the FHWA and FTA ensure timely implementation of transportation control measures (TCMs) in applicable State Implementation Plans (SIPs).[15] These and other CMAQ-eligible projects identified in approved SIPs should receive funding priority.

The FHWA recommends that States and MPOs develop their transportation/air quality programs using complementary measures that provide alternatives to single-occupant vehicle (SOV) travel while improving traffic flow through operational strategies and balancing supply and demand through pricing, parking management, regulatory, or other

[10] 23 U.S.C. 149(i)(2), as amended by Sec. 1113(b)(6)), Pub. L. 112-141 (July 6, 2012).
[11] See, http://www.fhwa.dot.gov/environment/air_quality/cmaq/research/.
[12] See, http://www.epa.gov/cleandiesel/publications.htm.
[13] See, http://www.nap.edu/catalog.php?record_id=10350.
[14] 23 U.S.C. 149(i)(1)(A), as amended by Sec. 1113(b)(6)).
[15] 42 U.S.C. 7506(c)(2)(B) (Section 176 of the CAA).

means.

V. ANNUAL APPORTIONMENT PROCESS FOR CMAQ FUNDS

A. State Federal-aid Apportionment

The MAP-21 establishes that for the apportioned Federal-aid highway program, the combined total for each State in FY 2013 shall equal the combined total apportioned for that State for FY 2012. In FY 2014, a similar process will be followed with the exception that no State shall receive less than 95 percent of the estimated tax payments in that State that were provided to the Highway Trust Fund.[16]

B. CMAQ Apportionment

Under ISTEA, TEA-21, and SAFETEA-LU, funding apportionments for each State were calculated based on a formula for weighted populations in ozone and CO nonattainment and maintenance areas. Unlike previous legislation, MAP-21 does not contain a specific statutory distribution formula for CMAQ apportionment. Under 23 U.S.C. 104(b)(4), as amended by Section 1105 of MAP-21, CMAQ apportionments are determined using a ratio of the State's FY 2009 CMAQ funding relative to the State's total apportioned Federal-aid for that year. The resulting ratio applies to both FY 2013 and FY 2014 CMAQ apportionments. The FY 2009 apportionment was calculated with the statutory formula from SAFETEA-LU. Therefore, the weighting factors from SAFETEA-LU, shown in Table 2, have been carried forward through MAP-21's use of the 2009 apportionments to set the FY 2013 and 2014 apportionments. The CMAQ apportionment for FY 2013 is $2.20 billion; for FY 2014, apportionment is estimated at $2.23 billion.[17]

TABLE 2

SAFETEA-LU CMAQ APPORTIONMENT FACTORS		
POLLUTANT	**CLASSIFICATION AT THE TIME OF ANNUAL APPORTIONMENT**	**WEIGHTING FACTOR**
Ozone (O_3) or (CO)	Maintenance (these areas had to be previously eligible as nonattainment areas - See Section VI.)	1.0
Ozone	Subpart 1 ("Basic")[18]	1.0
Ozone	Marginal	1.0
Ozone	Moderate	1.1

[16] 23 U.S.C. 104(c), as amended by Sec. 1105(a), Pub. L. 112-141 (July 6, 2012).
[17] 23 U.S.C. 104(b)(4), as amended by Sec. 1105(a), Pub. L. 112-141 (July 6, 2012).
[18] Subpart 1 classification carried under SAFETEA-LU since removed by EPA rulemaking, see 77 FR 28424 (May 14, 2012), available at http://www.gpo.gov/fdsys/pkg/FR-2012-05-14/pdf/2012-11232.pdf#page=2.

Ozone	Serious	1.2
Ozone	Severe	1.3
Ozone	Extreme	1.4
CO	Nonattainment	1.0
Ozone and CO	Ozone nonattainment or maintenance and CO nonattainment or maintenance	1.2 x O_3 factor
All States – minimum apportionment	1/2 of 1 percent total annual apportionment of CMAQ funds	N/A

C. Priority Set-aside for $PM_{2.5}$ Areas

Any State that has a $PM_{2.5}$ nonattainment or maintenance area—including those with approved SIPs that identify on-road mobile sources as insignificant for regional transportation conformity—is required under MAP-21 to invest a portion of its CMAQ funding in projects that reduce $PM_{2.5}$ directly or its precursors.[19] More specifically, an amount equal to 25 percent of the funds attributable to $PM_{2.5}$ nonattainment in each of the affected States must be used for projects targeting $PM_{2.5}$ reductions in those nonattainment and maintenance areas.[20] In addition, the legislation highlights diesel retrofits as a primary example of such related projects. Since MAP-21 removed the CMAQ apportionment formula that was in prior legislation—the primary means of establishing the weighted population that would be used in part to calculate the 25 percent—the FHWA is proposing a weighting factor for $PM_{2.5}$ through a rulemaking and public comment process. If this process leads to a final rule, FHWA plans on using the $PM_{2.5}$ weighting factor developed during that rulemaking for set-aside determinations made after the effective date of the final rule.

The pollutant weightings in Table 2 reflect the last statutory apportionment factors, i.e. the SAFETEA-LU formula. Please see the following section on State Flexibility and minimum apportionment considerations for further discussion.

D. State Flexibility: Mandatory—Flexible CMAQ Funding

Prior to MAP-21, each State was guaranteed a minimum of one-half percent of the year's total CMAQ program funding, regardless of whether the State had any nonattainment or maintenance areas. The minimum apportionment provision of SAFETEA-LU and past transportation authorizations has been eliminated under MAP-21, and replaced with a section on State Flexibility.[21] However, MAP-21's use of FY 2009 apportionments as the basis for FY 2013 and FY 2014 apportionments results in each State still receiving a minimum amount of funding. For both FY 2013 and 2014, States that received the

[19] 23 U.S.C. 149(k), as amended by Sec. 1113(b)(6), Pub. L. 112-141 (July 6, 2012).
[20] 23 U.S.C. 149(k), as amended by Sec. 1113(b)(6), Pub. L. 112-141 (July 6, 2012).
[21] 23 U.S.C. 149(d), as amended by Sec. 1113(b)(3), Pub. L. 112-141 (July 6, 2012).

minimum apportionment in FY 2009 under Section 104(b)(2)(d) as in effect on the day before enactment of MAP-21 and have designated nonattainment or maintenance areas for ozone or CO, will be able to use a portion of their CMAQ funding for any project eligible under either the CMAQ program or under the Surface Transportation Program (STP) at 23 U.S.C. 133. The flexible portion is determined by multiplying the ratio described in 23 U.S.C. 149(d)(2)(B) by the CMAQ amount apportioned to the State under 23 U.S.C. 104(b)(4) after deduction of the $PM_{2.5}$ set-aside.[22] This ratio is, essentially, the amount of FY 2009 CMAQ funding each State was permitted to spend on projects eligible under the STP bears to the total amount of CMAQ funding apportioned for that State under 23 U.S.C. 104(b)(2) as in effect on September 30, 2012.[23] States that have no ozone or CO nonattainment or maintenance areas will be able to use all their CMAQ funds for either CMAQ- or STP-eligible projects.[24]

Under past authorizations, the FHWA Office of Planning, Environment, and Realty and the Budget Division have identified annual apportionments of CMAQ funds as either *mandatory* or *flexible.* All funding was considered mandatory for States with weighted populations yielding one-half percent or more of the authorized funds (based on the table above). Prior to MAP-21 enactment, annual CMAQ funding apportioned through the application of 23 U.S.C. 104(b)(2)(B) and 104(b)(2)(C) had to be used for projects in nonattainment/maintenance areas. States with weighted populations yielding at least some apportioned value but less than one-half percent of the authorized funds received both mandatory and flexible funds to reach the minimum apportionment. For example, if a State's weighted population yielded two-tenths of 1 percent of the total authorized funds, it would receive two-tenths of 1 percent of the national funds as mandatory funds, and three-tenths of 1 percent as flexible funds. Thus, in this example, 40 percent of the State's funds would be mandatory and 60 percent would be flexible.

For States with no areas applicable to the apportionment table, their one-half percent is all flexible funding. These flexible funds can be used anywhere in the State for projects eligible for either CMAQ or the STP. The FHWA reports the breakdown of mandatory and flexible funds by State in its fiscal year apportionment documentation, i.e. the supplemental tables.[25]

As noted earlier, the specific CMAQ statutory apportionment formula in SAFETEA-LU was not carried forward under MAP-21. While State apportionments have been set using the 2009 levels as a base, the fine PM portion and the State flexibility considerations must be addressed through an assessment of all relevant criteria pollutants in each State. However, with the exception of the $PM_{2.5}$ values, these weights will be used to address the State Flexibility covering former minimum apportionment areas, since 23 U.S.C. 149(d)(3), as amended by MAP-21, requires the FHWA to factor in any changes in nonattainment and maintenance area designation. Consequently, the FY 2009 weighted nonattainment and maintenance area populations have been or will continue to be updated

[22] 23 U.S.C. 149(d)(2)(A), as amended by Sec. 1113(b)(3), Pub. L. 112-141 (July 6, 2012).
[23] 23 U.S.C. 149(d)(2)(B), as amended by Sec. 1113(b)(3), Pub. L. 112-141 (July 6, 2012).
[24] 23 U.S.C. 149(d)(1), as amended by Sec. 1113(b)(3), Pub. L. 112-141 (July 6, 2012).
[25] See http://www.fhwa.dot.gov/legsregs/directives/notices/n4510758/n4510758t14.htm.

to reflect changes in these designations for FY 2013 and FY 2014; the 2009 factors have been used because MAP-21 uses this fiscal year as the basis for the calculation. Unlike past apportionments, however, the update of the FY 2009 basis for the purposes of State Flexibility in minimum apportionment will not include revised population—only the changes in nonattainment and maintenance designations for the pollutants that applied in 2009.

E. Apportionments and State Allocation

With the exception of the $PM_{2.5}$ priority set-aside, the State may use its CMAQ funds in any ozone, CO, or PM nonattainment or maintenance area. Except for the $PM_{2.5}$ set-aside, a State is under no statutory obligation to allocate CMAQ funds in the same way they have been apportioned at the Federal level—either directly prior to MAP-21, or by reference via the 2009 apportionments under MAP-21. State departments of transportation (State DOT) are encouraged to consult affected MPOs and air quality agencies to determine regional and local CMAQ priorities and work with them to allocate funds accordingly.

F. Federal Share and State/Local Match Requirements

The Federal share for most CMAQ projects, generally, has been 80 percent. An exception to the Federal share requirement was provided via the Energy Independence and Security Act of 2007. This legislation amended 23 U.S.C. 120, *Federal share payable*, to provide temporary flexibility for States to use a 100 percent Federal share on all CMAQ projects. This flexibility was carried forward with each of the SAFETEA-LU extensions, but was not continued under the MAP-21. Consequently, as of October 1, 2012, Federal share requirements for CMAQ revert to the standard provisions of 23 U.S.C. 120. It should be noted that States are able to program a full, 100 percent Federal share for a select few project types listed under 23 U.S.C. 120(c). This section sets a priority for safety projects, although there are a number listed that also provide the potential for emissions reduction, including roundabouts, carpool/vanpool projects, traffic signalization, and others.[26]

The FHWA publishes a detailed manual, outlining the options and requirements for cost sharing, accounting structure and allowable costs as a matching share, and a host of other factors surrounding the financial elements of project implementation. Additional guidance on matching requirements for Federal Highway Administration (FHWA) funded grants and subgrants can be found in *Non-Federal Matching Requirements*[27].

VI. GEOGRAPHIC AREAS THAT ARE ELIGIBLE TO USE CMAQ FUNDS

A. Eligible Areas

[26] 23 U.S.C. 120(c)(1).
[27] See http://www.fhwa.dot.gov/legsregs/directives/policy/memonfmr20091229.htm

The CMAQ funds may be invested in all ozone, CO, and PM nonattainment and maintenance areas, including former areas where the NAAQS has been revoked. Funds also may be used for projects in proximity to nonattainment and maintenance areas if the **benefits will be realized primarily within the nonattainment or maintenance area.** The delineation of an area considered "in proximity" should be discussed with the FHWA and FTA field offices and elevated to headquarters if necessary. The FHWA issued a *Federal Register* notice[28] discussing this policy in 2002.

B. Maintenance Areas

The CMAQ funds may be invested in maintenance areas that have approved maintenance plans under CAA section 175A (42 U.S.C. 7505a) and 23 U.S.C. 149(b)). In States with ozone or CO maintenance areas but no nonattainment areas, mandatory CMAQ funds must be used in the maintenance areas.

C. Flexible Funds in PM Areas

While States may use flexible CMAQ funding anywhere and for any CMAQ- or STP-eligible project, the FHWA encourages States and MPOs to evaluate the cost-effectiveness and benefits to public health of targeting flexible CMAQ funding to projects that reduce PM. Examples of such projects include implementing a diesel retrofit or idle reduction program, constructing freight/intermodal transfer facilities, traffic signalization, Intelligent Transportation Systems (ITS) projects that reduce congestion, treating dirt or gravel roads, and purchasing street sweeping equipment.

[28] See http://www.gpo.gov/fdsys/pkg/FR-2002-01-16/pdf/02-1164.pdf.

VII. PROJECT ELIGIBILITY PROVISIONS

A. Project Eligibility: General Conditions

Each CMAQ project must meet three basic criteria: ***it must be a transportation project, it must generate an emissions reduction,***[29] ***and it must be located in or benefit a nonattainment or maintenance area***.[30] In addition, all Federal–aid projects—CMAQ is no exception—must be included in the MPO's current transportation plan and Transportation Improvement Program (TIP) (or the current Statewide Transportation Improvement Program (STIP) in areas without an MPO).[31] In nonattainment and maintenance areas, the project also must meet the conformity provisions contained in section 176(c) of the CAA and the transportation conformity regulations.[32] Lastly, all CMAQ-funded projects need to complete National Environmental Policy Act (42 U.S.C. 4321 *et seq*.) (NEPA) requirements and satisfy the basic eligibility requirements under titles 23 and 49 of the United States Code.

The following should guide CMAQ eligibility decisions:

1. Capital Investment

The CMAQ funds may be used to establish new or expanded transportation projects or programs that reduce emissions, including capital investments in transportation infrastructure, congestion relief efforts, vehicle acquisitions, diesel engine retrofits, or other capital projects.

2. Operating Assistance

There are several general conditions for operating assistance eligibility under the CMAQ program:

a. Operating assistance is limited to new transit, commuter and intercity passenger rail services, intermodal facilities, travel demand management strategies, including traffic operation centers, inspection and maintenance programs, and the incremental cost of expanding these services.

b. In using CMAQ funds for operating assistance, the intent is to help start up viable new transportation services that can demonstrate air quality benefits and eventually cover costs as much as possible. Other funding sources should supplement and ultimately replace CMAQ funds for operating assistance, as these projects no longer represent additional, net air quality benefits but have become part of the baseline transportation network. The provisions in 23 U.S.C. 116 place

[29] See discussion of the term "emissions reduction" in Section VII(A)(3).
[30] 23 U.S.C. 149(b).
[31] 23 U.S.C. 134 and 135.
[32] 40 CFR Part 93, Subpart B.

responsibilities for maintenance of transportation facilities on the States. Since facility maintenance is akin to operations, a time-limited period of CMAQ assistance provides adequate incentive and flexibility while not creating a pattern of excessive or even perpetual support.

c. Operating assistance includes all costs of providing new transportation services, including, but not limited to, labor, fuel, administrative costs, and maintenance.

d. When CMAQ funds are used for operating assistance, non-Federal share requirements still apply.

e. With the focus on start-up, and recognizing the importance of flexibility in the timing of financial assistance, the 3 years of operating assistance allowable under the CMAQ program may now be spread over a longer period, for a total of up to 5 sequential years of support. Grantees who propose to use CMAQ funding for operating support may spread the third year amount (an amount not to exceed the greater of year 1 or year 2) across an additional 2 years (i.e. years 4 and 5). This will provide an incremental, taper-down approach, while other funding is used for a higher proportion of the operating costs as needed. See Table 3 for examples of possible funding allocations. At the conclusion of the 5-year period, operating costs would have to be maintained with non-CMAQ funding. It is anticipated that this may enable a transition to more independent system operation. The amounts, which apply to years 1 and/or 2, are established at the discretion of the State or local sponsor.

Table 3 – Example Allocations of CMAQ Funds for Operating Assistance

Example	Year 1	Year 2	Year 3	Year 4	Year 5	Total
A	$300	$300	$200	$50	$50	$900
B	300	300	100	100	100	900
C	100	400	200	100	100	900

Eligible activities that used CMAQ funds for operating support in FY 2012, as described in the 2008 CMAQ Program Guidance, and that had not received operating assistance for three fiscal years as of September 30, 2012, may continue to receive operating assistance under MAP-21, transitioning into the 5-year schedule described above. The number of prior years of operating assistance will determine which year of the 5-year cycle applies in FY 2013.

Except as noted in this paragraph, activities that already have received 3 years of operating support under prior authorizations of the CMAQ program are not considered to be in a start-up phase and are not eligible for the expanded assistance period. Those transportation uses expressly eligible for CMAQ funding under SAFETEA-LU sections 1808(g)-(k) and certain provisions in appropriations acts are eligible for CMAQ dollars for an additional 5 years

consistent with this Section. The maximum allowable assistance level and the 5-year time period described above will apply.

f. Elements of operating assistance prohibited by statute or regulation are not eligible for CMAQ participation, regardless of their emissions or congestion reduction potential.

3. Emission Reduction

Air quality improvement is defined by several distinct terms in 23 U.S.C. 149. These terms include contribution to attainment, reduction in pollution, air quality benefits, and others. For purposes of this guidance, ***emission reduction*** represents this group of terms. CMAQ-funded projects or programs must reduce CO, ozone precursors (NO_x and VOCs), $PM_{2.5}$, PM_{10}, or PM precursor (e.g., NO_x) emissions from transportation; these reductions must contribute to the area's overall clean air strategy and can be demonstrated by the emissions reduction analysis that is required under this guidance.[33] States and MPOs also may consider the ancillary benefits of eligible projects, including greenhouse gas reductions, congestion relief, mobility, safety, or other elements, when programming CMAQ funds, though such benefits do not alone establish eligibility.

4. Planning and Project Development

Activities in support of other Title 23-eligible projects also may be appropriate for CMAQ investments. All phases of eligible projects—not only construction—are eligible for CMAQ funding, For example, studies that are part of the project development pipeline (e.g., preliminary engineering) under NEPA are eligible for CMAQ support. General studies that fall outside specific project development do not qualify for CMAQ funding. Examples of such ineligible efforts include major investment studies, commuter preference studies, modal market polls or surveys, transit master plans, and others. These activities are eligible for Federal planning funds.

B. Projects Ineligible for CMAQ Funding

The following projects are ineligible for CMAQ funding:

1. Light-duty vehicle scrappage programs.
2. Projects that add new capacity for SOVs are ineligible for CMAQ funding unless construction is limited to high-occupancy vehicle (HOV) lanes.[34] This HOV lane eligibility includes the full range of HOV facility uses authorized under 23 U.S.C 166, such as high-occupancy toll (HOT) and low-emission vehicles.
3. Routine maintenance and rehabilitation projects (e.g., replacement-in-kind of track or

[33] See 23 U.S.C. 149(b).
[34] 23 U.S.C. 149(c)(3), as amended by Sec. 1113(b)(2), Pub. L. 112-141 (July 6, 2012).

other equipment, reconstruction of bridges, stations, and other facilities, and repaving or repairing roads) are ineligible for CMAQ funding as they only maintain existing levels of highway and transit service, and therefore do not reduce emissions.[35] (See previous section covering eligibility for operational support.) Other funding sources, such as STP and FTA's Urbanized Area Formula Program (49 U.S.C. 5307), are available for such activities.

4. Administrative costs of the CMAQ program may not be defrayed with program funds, e.g., support for a State's "CMAQ Project Management Office" is not eligible.
5. Projects that do not meet the specific eligibility requirements of Titles 23 and 49, United States Code, are ineligible for CMAQ funds.
6. Stand-alone projects to purchase fuel.
7. Models and Monitors—Acquisition, operation, or development of models or monitoring networks are not eligible for CMAQ funds. As modeling or monitoring emissions, traffic operations, travel demand or other related variables do not directly lead to an emissions reduction, these activities or acquisitions are not eligible. Such efforts may be appropriate for Federal planning funds.
8. Litigation costs surrounding CMAQ or other Federal-aid projects.

C. Public-Private Partnerships (PPPs)

In a PPP, a private or non-profit entity's resources replace or supplement State or local funds and possibly a portion of the Federal-aid in a selected project.[36] The PPP component of CMAQ has evolved into a critical element of the program, as private sector involvement in such activities as freight and diesel retrofits has grown considerably.

Partnerships should have a legally binding, written agreement in place between the public agency and the private or non-profit entity before a CMAQ-funded project may be implemented. These agreements should be developed under relevant Federal and State law and should specify the intended use for CMAQ funding; the roles and responsibilities of the participating entities; and how the disposition of land, facilities, and equipment will be carried out should the original terms of the agreement be altered (e.g., due to insolvency, change in ownership, or other changes in the structure of the PPP).

Public funds should not be invested where a strong public benefit cannot be demonstrated. Consequently, CMAQ funds should be devoted to PPPs that benefit the general public by clearly reducing emissions, not for financing marginal projects. Consistent with the planning and project selection provisions of the Federal-aid highway program, the FHWA considers it essential that all interested parties have full, open, and timely access to the project selection process.

There are several other statutory restrictions and special provisions on the use of CMAQ funds in PPPs.[37] Eligible costs under this section should not include costs to fund an

[35] 23 U.S.C. 166.
[36] 23 U.S.C. 149(f), as amended by Sec. 1113(b), Pub. L. 112-141 (July 6, 2012).
[37] 23 U.S.C. 149(f)(2), as amended by Sec. 1113(b), Pub. L. 112-141 (July 6, 2012).

obligation imposed on private sector or non-profit entities under the CAA or any other Federal law. However, if the private or non-profit entity clearly is exceeding its obligations under Federal law, CMAQ funds may be used for that incremental portion of the project.

Eligible non-monetary activities that satisfy the non-Federal match requirements under the partnership provisions include the following:

- Ownership or operation of land, facilities, or other physical assets
- Construction or project management
- Other forms of participation approved by the Department.

Sharing of total project costs, both capital and operating, is a critical element of a successful public-private venture, particularly if the private entity is expected to realize profits as part of the joint venture. State and local officials are urged to consider a full range of cost-sharing options when developing a PPP, including a larger State/local match.

D. Costs and other Regulatory Requirements

The CMAQ projects must comply with other applicable Federal requirements, including those affecting determinations of eligible project costs. All Federal projects must conform to the appropriate cost principles for Federal-aid. Most CMAQ projects are subject to 2 CFR Part 225—also known as OMB Circular A-87—the cost principles for State, local, and Indian tribal governments.[38] These principles focus on determining the allowable costs for the subject government entities and also provide a discussion of the relationship between appropriate costs and the purpose of the program.

Sponsors also should be familiar with the general cost and accounting components of 49 CFR Part 18, which provides direction on administering Federal grants to State and local governments.

E. Programmatic Eligibility

The MAP-21 provides flexibility for States and MPOs to conduct a technical assessment of the program of CMAQ projects under review that fulfills the requirement for an emissions reduction demonstration.[39] This technical assessment is fully optional and can include the full program as listed in the TIP or a subset of that full program. The technical methods are at the discretion of the MPO but can include modeling or other contemporary tools generally found acceptable by professionals in the field. If the assessment is successful in demonstrating an emissions reduction, no further analysis will need to be provided by the MPO for those projects included, and these efforts can proceed to CMAQ obligation. However, emissions reductions also should be demonstrated for CMAQ projects not

[38] See http://www.whitehouse.gov/sites/default/files/omb/fedreg/2005/083105_a87.pdf.
[39] 23 U.S.C. 149(j), as amended by MAP-21 sec. 1113(b)(6), Pub. L. 112-141 (July 6, 2012).

included in the selected subset covered by the technical assessment.

F. Eligible Projects and Programs

Eligibility information is provided below. Not all possible requests for CMAQ funding are covered—this section provides examples of general project types that may be eligible for CMAQ funds.

1. Diesel Engine Retrofits & Other Advanced Truck Technologies

The MAP-21 continues the emphasis SAFETEA-LU placed on diesel engine retrofits and the various types of projects that fall under this broad category.[40] These efforts are defined as vehicle replacement, repowering (replacing an engine with a cleaner diesel engine, alternative fuels, etc.), rebuilding an engine, or other technologies determined by the EPA as appropriate for reducing emissions from diesel engines. This latter point, highlighting developing technologies, establishes a degree of flexibility and a need for periodic adjustment in the definition by the EPA. The legislation defines retrofit projects as applicable to both on-road motor vehicles and non-road construction equipment; the latter must be used in Title 23 projects based in nonattainment or maintenance areas for either PM or ozone.[41]

The MAP-21 expands the prior focus created by the SAFETEA-LU. Specifically for $PM_{2.5}$ areas, diesel retrofits are called out as eligible projects in the Priority Consideration section.[42] Similarly, such efforts are again highlighted in the discussion of the $PM_{2.5}$ priority set-aside, and emphasized again in the closely related section on construction vehicles and equipment.[43]

More than 13 million diesel engines make up the legacy fleet operating in the U.S. The vast majority of these power on-road heavy-duty and medium-duty trucks, locomotives, and off-road construction equipment—all of which may be eligible for CMAQ funding.

There are a number of specific project types in the diesel retrofit area for which CMAQ funds are eligible. Assuming all other CMAQ criteria are met, eligible projects could include diesel engine or full vehicle replacement; full engine rebuilding and reconditioning; and purchase and installation of after-treatment hardware, including particulate matter traps and oxidation catalysts, and other technologies; and support for heavy-duty vehicle retirement programs. Project agreements involving replacements for either engines or full vehicles should include a provision for disposal or destruction of the engine block, verification that the engine is no longer contributing emissions in the nonattainment or

[40] 23 U.S.C. 149(b)(8).
[41] *Id.*
[42] 23 U.S.C. 149(g)(3), as amended by, Sec. 1113(b)(5), Pub. L. 112-141 (July 6, 2012).
[43] 23 U.S.C. 149(k), as amended by Sec. 1113(b)(6), Pub. L. 112-141 (July 6, 2012).

maintenance area, or for other processes at the State's discretion that track the retirement of the vehicle or engine in accordance with the State's or sub-grantee's program[44]. The MAP-21 provided one change to the approach in establishing eligibility for emissions control equipment. After-treatment and other on-board control devices are restricted to those EPA or the California Air Resources Board (CARB) verified and/or technologies as defined in section 791 of the Energy Policy Act of 2005 (42 U.S.C. 16131).[45]

A strong component of the SAFETEA-LU focus on diesel retrofits, construction vehicles and equipment also are eligible under MAP-21. Eligible acquisitions or retrofits would be for those capital items used for highway construction projects in PM2.5 nonattainment or maintenance areas. Equipment or vehicles used predominantly in a maintenance role would not qualify. These would include loaders or backhoes in yard or depot work, tractors assigned to mowing or other median maintenance, impactors or rollers involved in routine work, such as pothole repair, and others.

The CMAQ funds may be used to purchase and install emission control equipment on school buses. (Such projects, generally, should be administered by FHWA; see Transit Improvements, below). In addition, although CMAQ funds should not be used for the initial purchase of conventionally fueled airport parking lot shuttles, funds may be used for purchase and installation of after treatment hardware or repowering (with a hybrid drive train, for example).

Refueling is not eligible as a stand-alone project, but is eligible if it is required to support the installation of emissions control equipment, repowering, rebuilding, or other retrofits of non-road engines.

In addition to equipment and technology, outreach activities that provide information exchange and technical assistance to diesel owners and operators on retrofit options are eligible investments. These projects could include the actual education and outreach program, construction or acquisition of appropriate classroom buildings, and other efforts to promote the use of retrofit technologies.

Non-road mobile source projects also are eligible for CMAQ funding. Most notably, a considerable amount of CMAQ support has been directed to locomotive retrofit and the acquisition of clean locomotives, such as railyard switchers and shunters that fit the generator-set criterion (See Freight and Intermodal, Section VII. F. 4). The FHWA acknowledges that diesel retrofit projects may include non-road mobile source endeavors, which traditionally have been outside the Federal-aid process. However, the MAP-21 clarifies CMAQ eligibility for non-road diesel retrofit projects. Areas that fund these projects are not required to take credit for the projects in the transportation conformity process. For areas that want to take credit,

[44] Note that if a replacement project does not require the permanent destruction of the replaced vehicle or engine, it is not eligible to receive emission reduction credit in a SIP or conformity determination in accordance with EPA policy and guidance (http://www.epa.gov/otaq/stateresources/transconf/policy.htm#retrofit).
[45] 23 U.S.C. 149(b)(8)(A)(ii), as amended by Sec. 1113(a)(4), Pub. L. 112-141 (July 6, 2012).

the EPA developed guidance for estimating diesel[46] retrofit emission reductions and for applying the credit in the SIP and transportation conformity processes.

Transportation projects that are part of an effort associated with EPA's Diesel Emissions Reduction Act (DERA) also may be eligible. Federal field offices, State DOTs, and other local sponsors should consult with the nearest EPA Regional Office on projects that feature DERA elements or mutual funding with CMAQ.

In addition to retrofit projects, upgrading long-haul heavy-duty diesel trucks with EPA and/or CARB verified advanced technologies, such as idle reduction devices, cab and trailer aerodynamic fixtures, and single-wide or other efficient tires, has been demonstrated by the EPA's *Smart Way Transport Partnership Program* to reduce NO_x emissions and save fuel. These strategies also are eligible for CMAQ support. Such projects funded directly by CMAQ that involve the private sector should be part of a PPP, as discussed in Section VII.C.

Many diesel retrofit projects involve private sector participation. Although standard match rates established in 23 U.S.C. 120 apply to these efforts, States and local governments are encouraged to seek a higher non-Federal match from those participants that ultimately will own the equipment. An even 50-50 split share between the Federal CMAQ and all other sources has been a frequent compromise for many past projects in this arena.

2. Idle Reduction

Idle reduction projects that reduce emissions and are located within, or in proximity to and primarily benefiting, a nonattainment or maintenance area are eligible for CMAQ investment. (The geographic requirement mainly applies to off-board projects, i.e., truck stop electrification (TSE) efforts.) However, if CMAQ funding is used for an on-board project (i.e. auxiliary power units, direct fired heaters, etc.) the vehicle—usually a heavy-duty truck—should travel within, or in proximity to and primarily benefiting, a nonattainment or maintenance area. Idle reduction devices are verified by the EPA.

There have been several instances where operating assistance funds have been requested for TSE services. The CMAQ funding for TSE projects has been limited to capital costs (i.e. deployment of TSE infrastructure). Operating assistance for TSE projects should not be funded under the CMAQ program since TSE projects generate their own revenue stream and therefore should be able to cover all operating expenses from the accumulated revenue.

Commercial idle reduction facilities cannot be located within rest areas of the Interstate right-of-way (ROW).[47] The SAFETEA-LU initially provided for these facilities in the ROW. However, this provision was removed with the SAFETEA-LU Technical

[46] See http://www.epa.gov/otaq/stateresources/transconf/policy.htm#retrofit.
[47] 23 U.S.C. 111(b).

Corrections Bill that followed.

3. Congestion Reduction & Traffic Flow Improvements

Traffic flow improvements may include the following:

a. Traditional Improvements

Traditional traffic flow improvements, such as the construction of roundabouts, HOV lanes, left-turn or other managed lanes, are eligible for CMAQ funding provided they demonstrate net emissions benefits through congestion relief.

b. Intelligent Transportation Systems

ITS projects, such as traffic signal synchronization projects, traffic management projects, and traveler information systems, can be effective in relieving traffic congestion, enhancing transit bus performance, and improving air quality. The following have the greatest potential for improving air quality:

- Regional multimodal traveler information systems
- Traffic signal control systems
- Freeway management systems
- Electronic toll-collection systems
- Transit management systems
- Incident management programs.

The FHWA has provided a lengthier discussion of the benefits[48] associated with various operational improvements.

c. Value/Congestion Pricing

Congestion pricing is a market-based mechanism that allows tolls to rise and fall depending on available capacity and demand. Tolls can be charged electronically, thereby eliminating the need for full stops at tollbooths. In addition to the benefits associated with reducing congestion, revenue is generated that can be used to pay for a wide range of transportation improvements, including Title 23-eligible transit services in the newly tolled corridor.

Parking pricing can include time-of-day parking charges that reflect congested conditions. These strategies should be designed to influence trip-making behavior and may include charges for using a parking facility at peak periods, or a range of employer-based parking cash-out policies that provide financial incentives to avoid parking or driving alone. Parking pricing integrated with other pricing strategies is

[48] See http://ops.fhwa.dot.gov/program_areas/programareas.htm.

encouraged.

Pricing encompasses a variety of market-based approaches such as:

- **HOT lanes**, or High Occupancy Toll lanes, on which variable tolls are charged to drivers of low-occupancy vehicles using HOV lanes, such as the "FasTrak" Lanes on I-15 in San Diego and the recently converted I-394 in Minneapolis in which prices vary dynamically every 2 minutes based on traffic conditions.
- **New variably tolled express lanes** on existing toll-free facilities, such as the "91 Express Lanes" on State Route 91 in Orange County, CA.
- **Variable tolls on existing or new toll roads**, such as on the bridges and tunnels operated by the Port Authority of New York and New Jersey.
- **Network-wide or cordon pricing**, such as implemented in Stockholm, London, and Singapore.
- **Usage-based vehicle pricing**, such as mileage-based vehicle taxation being explored by the State of Oregon, or pay-per-mile car insurance.

As with any eligible CMAQ project, value pricing should generate an emissions reduction. Marketing and outreach efforts to expand and encourage the use of eligible pricing measures may be funded indefinitely. Eligible expenses for reimbursement include, but are not limited to: tolling infrastructure, such as transponders and other electronic toll or fare payment systems; small roadway modifications to enable tolling, marketing, public outreach, and support services, such as transit in a newly tolled corridor. Innovative pricing approaches yet to be deployed in the U.S. also may be supported through the *Value Pricing Pilot Program.*[49]

Operating expenses for traffic operating centers (TOCs) are eligible for CMAQ funding if they can be shown to produce air quality benefits, and if the expenses are incurred from new or additional capacity. The operating assistance parameters discussed in Section VII.A.2 apply.

Projects or programs that involve the purchase of integrated, interoperable emergency communications equipment are eligible for CMAQ funding.

4. Freight/Intermodal

Projects and programs targeting freight capital costs—rolling stock or ground infrastructure—are eligible provided that air quality benefits can be demonstrated. Freight projects that reduce emissions fall generally into two categories: primary efforts that target emissions directly or secondary projects that reduce net emissions.

Successful primary projects could include new diesel engine technology or retrofits of

[49] See http://ops.fhwa.dot.gov/tolling_pricing/value_pricing/index.htm.

vehicles or engines. See discussion in Section VII.F.1. Eligibility under CMAQ is not confined to highway projects, but also applies to nonroad mobile freight projects such as rail.

Secondary projects reduce emissions through modifications or additions to infrastructure and the ensuing modal shift. Support for an intermodal container transfer facility may be eligible if the project demonstrates reduced diesel engine emissions when balancing the drop in truck VMT against the increase in locomotive or other non-highway activity. Intermodal facilities, such as inland transshipment ports or near/on-dock rail, may generate substantial emissions reductions through the decrease in miles traveled for older, higher-polluting heavy-duty diesel trucks. This secondary, indirect effect on truck traffic and the ensuing drop in diesel emissions help demonstrate eligibility.

The transportation function of these freight/intermodal projects should be emphasized. Marginal projects that support freight operations in a very tangential manner are not eligible for CMAQ funding. Warehouse handling equipment, for example, is not an eligible investment of program funds. Warehouses, themselves, or other similar structures, such as transit sheds, bulk silos or other permanent, non-mobile facilities that function more as storage resources are not eligible. However, equipment that provides a transportation function or directly supports this function is eligible, such as railyard switch locomotives or shunters that fall into the generator-set or other clean engine category. Similarly, large-scale container gantry cranes, or other heavy-duty container handling equipment that is a clear link in the intermodal process can be eligible as well. Also, on the ground operations side of aviation, the purchase or retrofit of airport handling equipment can be eligible, including baggage handlers, aircraft tow motors, and other equipment that plays a role in this intermodal link.

5. Transportation Control Measures (TCM)

Most of the TCMs included in Section 108 of the CAA, listed below, are eligible for CMAQ funding. We would note that one particular CAA TCM, created to encourage removal of pre-1980 light-duty vehicles, is specifically excluded from CMAQ eligibility.[50]

i. Programs for improved public transit;
ii. Restriction of certain roads or lanes to, or construction of such roads or lanes for use by, passenger buses or HOV;
iii. Employer-based transportation management plans, including incentives;
iv. Trip-reduction ordinances;
v. Traffic flow improvement programs that reduce emissions;
vi. Fringe and transportation corridor parking facilities serving multiple-occupancy vehicle programs or transit service;

[50] 23 U.S.C. 149(b)(1)(A)(i)

vii. Programs to limit or restrict vehicle use in downtown areas or other areas of emission concentration particularly during periods of peak use;
viii. Programs for the provision of all forms of high-occupancy, shared-ride services;
ix. Programs to limit portions of road surfaces or certain sections of the metropolitan area to the use of non-motorized vehicles or pedestrian use, both as to time and place;
x. Programs for secure bicycle storage facilities and other facilities, including bicycle lanes, for the convenience and protection of bicyclists, in both public and private areas;
xi. Programs to control extended idling of vehicles;
xii. Reducing emissions from extreme cold-start conditions;
xiii. Employer-sponsored programs to permit flexible work schedules;
xiv. Programs and ordinances to facilitate non-automobile travel, provision and utilization of mass transit, and to generally reduce the need for SOV travel, as part of transportation planning and development efforts of a locality, including programs and ordinances applicable to new shopping centers, special events, and other centers of vehicle activity; and
xv. Programs for new construction and major reconstructions of paths, tracks, or areas solely for the use by pedestrian or other non-motorized means of transportation when economically feasible and in the public interest.

6. Transit Improvements

Many transit projects are eligible for CMAQ funds. The general guideline for determining eligibility is whether the project increases transit capacity and would likely result in an increase in transit ridership and a potential reduction in congestion. As with other types of CMAQ projects, there should be a quantified estimate of the project's emissions benefits accompanying the proposal.

The FTA administers most transit projects. For such projects, after the FTA determines a project eligible, CMAQ funds will be transferred, or "flexed," from the FHWA to the FTA, and the project will be administered according to the appropriate FTA program requirements. Certain types of eligible transit projects for which FTA lacks statutory authority, such as diesel retrofit equipment for public school bus fleets, may be the responsibility of the State or other eligible project sponsor and are administered by FHWA.

a. Facilities

New transit facilities (e.g., lines, stations, terminals, transfer facilities) are eligible if they are associated with new or enhanced public transit, passenger rail, or other similar services. Routine maintenance or rehabilitation of existing facilities is not eligible, as it does not reduce emissions. However, rehabilitation of a facility may be eligible if the vast majority of the project involves physical improvements that will increase transit service capacity. In such cases there should be supporting

documentation showing an expected increase in transit ridership that is more than minimal. If the vast majority of the project involves capacity enhancements, other elements involving refurbishment and replacement-in-kind also are eligible.

b. Vehicles and Equipment

New transit vehicles (bus, rail, or van) to expand the fleet or replace existing vehicles are eligible. Transit agencies are encouraged to purchase vehicles that are most cost-effective in reducing emissions. Diesel engine retrofits, such as replacement engines and exhaust after-treatment devices, are eligible if certified or verified by the EPA or California Air Resources Board (CARB). See discussion in Section VII.F.1. Routine preventive maintenance for vehicles is not eligible as it only returns the vehicles to baseline conditions. Other than diesel engine retrofits, other transit equipment may be eligible if it represents a major systemwide upgrade that will significantly improve speed or reliability of transit service, such as advanced signal and communications systems.

c. Fuel

Fuel, whether conventional or alternative fuel, is an eligible expense only as part of a project providing operating assistance for new or expanded transit service under the CMAQ program. This includes fuels and fuel additives considered diesel retrofit technologies by the EPA or CARB. Purchase of alternative fuels is authorized in some States based on the continuation of a series of exemptions for uses expressly eligible for CMAQ funding under SAFETEA-LU section 1808(k) and certain provisions in subsequent appropriations acts. The maximum allowable assistance level and time limitation described in Section VII.A.2.will apply.

d. Operating Assistance

Operating assistance to introduce new transit service or expand existing transit service is eligible. The eligibility applies regardless of the size of the urbanized area (UZA) or whether a particular grantee is or was previously authorized to use funding under Chapter 53 of Title 49 U.S.C. for operating assistance. For a detailed discussion of operating assistance eligibility, including the changes brought about by MAP-21, please see Section VII.A.2 above.

e. Transit Fare Subsidies

The CMAQ funds may be used to subsidize regular transit fares in an effort to prevent the NAAQS from being exceeded, but only under the following conditions: The reduced or free fare should be part of a comprehensive areawide program to prevent such an anticipated exceedance. For example, “Ozone Action” programs vary in scope around the country, but they generally include actions that individuals and employers can take, and they are aimed at all major sources of air pollution, not just transportation. The subsidized fare should be available to the general public and may

not be limited to specific groups. It may only be offered during periods of elevated pollution when the threat of exceeding the NAAQS is greatest; e.g., it is not intended for the entire high-ozone season. The fare subsidy proposal should demonstrate that the responsible local agencies will combine the reduced or free fare with a robust marketing program to inform SOV drivers of other transportation options. Because the fare subsidy is not strictly a form of operating assistance, it would not be subject to the 5-year limit.

7. Bicycle and Pedestrian Facilities and Programs

Bicycle and pedestrian facilities and programs are included as a TCM in section 108(f)(1)(A) of the CAA (42 U.S.C. 7408(f)(1)(A)). The following are eligible projects:

- Constructing bicycle and pedestrian facilities (paths, bike racks, support facilities, etc.) that are not exclusively recreational and reduce vehicle trips.
- Non-construction outreach related to safe bicycle use.
- Establishing and funding State bicycle/pedestrian coordinator positions for promoting and facilitating nonmotorized transportation modes through public education, safety programs, etc. (Limited to one full-time position per State).

Bicycle and pedestrian programs that are not supported under 23 CFR Part 652, *Pedestrian and Bicycle Accommodations and Projects*, also are not eligible for CMAQ funding. For example, under 23 CFR 652.9(b)(3), a non-construction bicycle project does not include salaries for administration, maintenance costs, and other items akin to operational support under 23 CFR 652.9(b)(3), and, therefore, these are not allowable CMAQ costs.

Additional activities related to bicycle and pedestrian programs can be supported by other elements of the Federal-aid highway program. These efforts are described at the FHWA's Bicycle and Pedestrian Programs Web site.[51]

8. Travel Demand Management

Travel demand management (TDM) encompasses a diverse set of activities that focus on physical assets and services that provide real-time information on network performance and support better decisionmaking for travelers choosing modes, times, routes, and locations. Such projects can help ease congestion and reduce SOV use—contributing to mobility, while enhancing air quality and saving energy resources. Similar to ITS and Value Pricing, today's TDM programs seek to optimize the performance of local and regional transportation networks. The following activities are eligible if they are explicitly aimed at reducing SOV travel and associated emissions:

- Fringe parking
- Traveler information services

[51] See http://www.fhwa.dot.gov/environment/bicycle_pedestrian/.

- Shuttle services
- Guaranteed ride home programs
- Carpools, vanpools
- Traffic calming measures
- Parking pricing
- Variable road pricing
- Telecommuting/Teleworking
- Employer-based commuter choice programs.

The CMAQ funds may support capital expenses and, as discussed in Section VII.A.2, up to 5 years of operating assistance to administer and manage new or expanded TDM programs. Marketing and outreach efforts to expand use of TDM measures may be funded indefinitely, but only if they are broken out as distinct line items.

Eligible telecommuting activities include planning, preparing technical and feasibility studies, and training. Construction of telecommuting centers and computer and office equipment purchases should not be supported with CMAQ funds.

9. Public Education and Outreach Activities

The goal of CMAQ-funded public education and outreach activities is to educate the public, community leaders, and potential project sponsors about connections among trip making and transportation mode choices, traffic congestion, and air quality. Public education and outreach can help communities reduce emissions and congestion by inducing drivers to change their transportation choices. More important, an informed public is likely to support larger regional measures necessary to reduce congestion and meet CAA requirements.

A wide range of public education and outreach activities is eligible for CMAQ funding, including activities that promote new or existing transportation services, developing messages and advertising materials (including market research, focus groups, and creative), placing messages and materials, evaluating message and material dissemination and public awareness, technical assistance, programs that promote the Tax Code provision related to commute benefits, transit "store" operations, and any other activities that help forward less-polluting transportation options.

Using CMAQ funds, communities have disseminated many transportation and air quality public education messages, including maintain your vehicle; curb SOV travel by trip chaining, telecommute and use alternate modes; fuel properly; observe speed limits; don't idle your vehicle for long durations; eliminate "jack-rabbit" starts and stops; and others.

Long-term public education and outreach can be effective in raising awareness that can lead to changes in travel behavior and ongoing emissions reductions; therefore, these activities may be funded indefinitely.

10. Transportation Management Associations

Transportation Management Associations (TMAs) are groups of citizens, firms, or employers that organize to address the transportation issues in their immediate locale by promoting rideshare programs, transit, shuttles, or other measures. The TMAs can play a useful role in brokering transportation services to private employers.

Subject to applicable cost principles under 2 CFR Part 225, CMAQ funds may be used to establish TMAs provided that they reduce emissions. Eligible expenses include TMA start-up costs and up to 5 years of operating assistance as discussed in Section VII.A.2. Eligibility of specific TMA activities is addressed throughout this guidance.

11. Carpooling and Vanpooling

Eligible activities can be divided into two types of costs: *marketing* (which applies to both carpools and vanpools) and *vehicle* (which applies to vanpools only).

a. Carpool/vanpool marketing covers existing, expanded, and new activities designed to increase the use of carpools and vanpools, and includes purchase and use of computerized matching software and outreach to employers. Guaranteed ride home programs are also considered marketing tools. Marketing costs may be funded indefinitely.

b. Vanpool vehicle capital costs include purchasing or leasing vans for use in vanpools. Eligible operating costs, limited to 5 years as set forth in Section VII.A.2, empty-seat subsidies, maintenance, insurance, administration, and other related expenses. Prorated cost sharing plans that establish grant proportions for undefined shares of capital and operating costs need to be broken down to the specific components or line items that establish the capital-operating shares.

The CMAQ funds should not be used to buy or lease vans that would directly compete with or impede private sector initiatives. States and MPOs should consult with the private sector prior to using CMAQ funds to purchase vans, and if private firms have definite plans to provide adequate vanpool service, CMAQ funds should not be used to supplant that service.

In accordance with 23 U.S.C. 120(c)(1), carpooling and vanpooling activities may be supported with up to 100 percent Federal funding, under certain limitations.

12. Carsharing

The MAP-21 specifically highlights carsharing projects in the amended section

on traffic demand.[52] These efforts involve the pooling of efficient, low-emission vehicles, provided to travelers who have occasional need for a vehicle but not the constant, daily necessity that demands ownership. As with any CMAQ project, sponsors need to demonstrate an emissions reduction from the carsharing program. If a programwide emissions reduction cannot be demonstrated, CMAQ funding may be available to support vehicle costs under Alternative Fuels and Vehicles eligibility, discussed in Section VII.F.17.

13. Extreme Low-Temperature Cold Start Programs

Projects intended to reduce emissions from extreme cold-start conditions are eligible for CMAQ funding. Such projects include retrofitting vehicles and fleets with water and oil heaters and installing electrical outlets and equipment in publicly owned garages or fleet storage facilities.

14. Training

States and MPOs may use Federal-aid funds to support training and educational development for the transportation workforce. Such activities are subject to applicable cost principles in 2 CFR Part 225. The FHWA encourages State and local officials to weigh the air quality benefits of such training against other cost-effective strategies detailed elsewhere in this guidance before using CMAQ funds for this purpose. Training funded with CMAQ dollars should be directly related to implementing air quality improvements and be approved in advance by the FHWA Division office.

15. Inspection/Maintenance (I&M) Programs

Funds under the CMAQ program may be used to establish either publicly or privately owned I&M facilities. Eligible activities include construction of facilities, purchase of equipment, I&M program development, and one-time start-up activities, such as updating quality assurance software or developing a mechanic training curriculum. The I&M program must constitute new or additional efforts, existing funding (including inspection fees) should not be displaced, and operating expenses are eligible for 5 years as discussed in Section VII.A.2.

States or other sponsors planning new or expanded I&M programs that incorporate other elements of a State's vehicle administrative function, e.g. registration, safety inspection, titling, etc., must remove these line items from the CMAQ project. These tasks are not linked to the CMAQ purpose and are, therefore, not allowable costs.

Privately Owned I&M Facilities

[52] 23 U.S.C. 149(b)(7), as amended by Sec. 1113(b)(7), Pub. L. 112-141 (July 6, 2012).

In States that rely on privately owned I&M facilities, State or local I&M program-related administrative costs may be funded under the CMAQ program as in States that use public I&M facilities. However, CMAQ support to establish I&M facilities at privately owned stations, such as service stations that own the equipment and conduct emission test-and-repair services, requires a PPP.

The establishment of "portable" I&M programs, including remote sensing, is also eligible under the CMAQ program, provided that they are public services, reduce emissions, and do not conflict with statutory I&M requirements or EPA regulations.

16. Innovative Projects

State and local organizations have worked with various types of transportation services to better meet the travel needs of their constituents. These innovative projects also may show promise in reducing emissions, but do not yet have supporting data. The FHWA has supported and funded some of these projects as demonstrations to determine their benefits and costs. Such innovative strategies are not intended to bypass the definition of basic project eligibility, but seek to better define the projects' future role in strategies to reduce emissions.

For a project or program to qualify as an innovative project, it should be defined as a transportation project and be expected to reduce emissions by decreasing VMT, fuel consumption, congestion, or by other factors. The FHWA encourages States and MPOs to creatively address their air quality problems and to consider new services, innovative financing arrangements, PPPs, and complementary approaches that use transportation strategies to reach clean air goals.

Given the untried nature of these innovative projects, before-and-after studies should be completed to determine actual project impacts on air quality as measured by net emissions reduced. These assessments should document the project's immediate impacts in addition to long-term benefits. A schedule for completing the study should be a part of the project agreement. Completed studies should be submitted to the FHWA Division office within 3 years of implementation of the project or 1 year after the project's completion, whichever is sooner.

17. Alternative Fuels and Vehicles

The FHWA issued a memorandum in April 2011, covering the relationship between the required emissions reduction benefits of alternative fuel vehicles and the associated cost principles at 2 CFR Part 225.[53] Essentially, this guidance illustrates the cost-benefit relationship between different vehicle types and functions and the air quality benefit provided as a cost basis under the CMAQ program. The memorandum, outlining the requirements in 23 U.S.C. 149, supports eligibility only for the incremental cost, limited to the marginal emissions-reducing elements of the alternative fuel vehicles that are acquired

[53] Memorandum is at the following link:
http://www.fhwa.dot.gov/environment/air_quality/cmaq/policy_and_guidance/cmaqaltfuel.cfm.

through PPPs or that are purchased by public sponsors.

Program funds may be used to support projects involving the alternative or renewable fuels defined in the Energy Policy Act of 1992[54] or the Energy Independence and Security Act of 2007.[55] All standard eligibility criteria apply. Aside from fuel acquisitions that are part of a transit operating support effort, stand-alone purchase of any fuel—alternative or otherwise—is not an eligible CMAQ cost. However, the few exceptions provided by Section 1808(k) of SAFETEA-LU continue under MAP-21, subject to the limitation on operating assistance as described in Section VII.A.2.

Generally, CMAQ support for alternative fuel vehicle projects can be broken into the following areas:

Infrastructure

Except as noted below, establishing publicly owned fueling facilities and other infrastructure needed to fuel alternative-fuel vehicles is an eligible expense, unless privately-owned fueling stations are in place and reasonably accessible. Fueling facilities can dispense one or more of the alternative fuels identified in section 301 of the 1992 Energy Policy Act or biodiesel, or provide recharging for electric vehicles. Additionally, CMAQ funds may support converting a private fueling facility to support alternative fuels through a public-private partnership agreement. In accordance with 23 U.S.C. 149(c)(2), and 23 U.S.C. 111, regarding the prohibition of commercial activities in the Interstate ROW, CMAQ-funds may be used to establish or support refueling facilities within the Interstate ROW, providing these services are offered at no charge.

Non-transit Vehicles

The CMAQ funds may be used to purchase publicly-owned alternative fuel vehicles, including passenger vehicles, service trucks, street cleaners, and others. However, only publicly owned vehicles providing a dominant transportation function can be fully funded, such as paratransit vans, incident management support vehicles, refuse haulers, and others. Costs associated with converting fleets to run on alternative fuels are also eligible. When non-transit vehicles are purchased through PPPs, only the cost difference between the alternative fuel vehicles and comparable conventional fuel vehicles is eligible. Such vehicles should be fueled by one of the alternative fuels identified in section 301 of the 1992 Energy Policy Act or biodiesel.

Eligible projects also include alternatives to diesel engines and vehicles. Alternative fuel vehicle projects that are implemented as diesel retrofits and involve the replacement of an operable engine—not standard fleet turnover—would be eligible for full Federal

[54] 42 U.S.C. 13211, (Energy Policy Act of 1992, Sec. 301, Pub. L. 102-486 (October 24, 1992)).
[55] 42 U.S.C. 7545(o)(1) (Energy Independence and Security Act of 2007, Sec. 201, Pub. L. 110-140 (December 19, 2007)).

participation, i.e. an 80 percent Federal share of the full vehicle cost.

Hybrid Vehicles

Although not defined by the Energy Policy Act of 1992 as alternative fuel vehicles, certain hybrid vehicles that have lower emissions rates than their non-hybrid counterparts may be eligible for CMAQ investment. Hybrid vehicle models that are in part the focus of State legislation addressing HOV exemptions for alternative fuel and low emissions vehicles are considered eligible for CMAQ support.[56] Other hybrid vehicles will be assessed on a case specific basis, as there is no specific EPA regulation available to rate the lower emissions and energy efficiency advantages of the models involved**.**

Projects involving heavier vehicles, including refuse haulers and delivery trucks, also may be appropriate for program support. Eligibility should be based on a comparison of the emissions projections of these larger candidate vehicles and other comparable models.

VIII. PROJECT SELECTION PROCESS-GENERAL CONDITIONS

Proposals for CMAQ funding should include a precise description of the project, providing information on its size, scope, location, and timetable. Also, an assessment of the project's expected emission reduction benefits should be completed prior to project selection to better inform the selection of CMAQ projects (See below).

A. Air Quality Analysis

1. Quantitative Analyses

Quantified emissions benefits (i.e., emissions reductions) and disbenefits (i.e., emissions increases) should be included in all project proposals, except where it is not possible to quantify emissions benefits (see Qualitative Assessment, Section VII(A)(2) below). Benefits and disbenefits should be included for all pollutants for which the area is in nonattainment or maintenance status and should include appropriate precursor emissions. Benefits should be listed in a consistent fashion (i.e., kg/day) across projects to allow accurate comparison during the project selection process. Net benefits from all emissions sources involved should be included in the analysis. For example, in analyzing a commuter rail project, net benefits would include emissions reductions from the auto trips avoided, and emissions increases tied to locomotive operation.

State and local transportation and air quality agencies conduct CMAQ-project air quality analyses with different approaches, analytical capabilities, and technical expertise. Section 149(h) of title 23, United States Code, encourages State DOTs and MPOs to consult with State and local air quality agencies in nonattainment and maintenance areas

[56] U. S. Department of Energy, Alternative Fuels Data Center, available at http://www.afdc.energy.gov/laws/matrix/incentive.

about the estimated emission reductions from CMAQ proposals. However, while no single method is specified, every effort should be taken to ensure that determinations of air quality benefits are credible and based on a reproducible and logical analytical procedure.

2. Qualitative Assessment

Although quantitative analysis of air quality impacts is expected for almost all project types, an exception will be made when it is not possible to accurately quantify emissions benefits. In these cases, qualitative assessments based on reasoned and logical determinations that the projects or programs will decrease emissions and contribute to attainment or maintenance of a NAAQS are acceptable.

Public education, marketing, and other outreach efforts, which can include advertising alternatives to SOV travel, employer outreach, and public education campaigns, may fall into this category. The primary benefit of these activities is enhanced communication and outreach that is expected to influence travel behavior and thus air quality.

3. Analyzing Groups of Projects

In some situations, it may be more appropriate to examine the impacts of comprehensive strategies to improve air quality by grouping projects. For example, transit improvements coupled with demand management to reduce SOV use in a corridor might best be analyzed together. Other examples include linked signalization projects, transit improvements, marketing and outreach programs, and ridesharing programs that affect an entire region or corridor.

4. Tradeoffs

As noted above, emissions benefits should be calculated for all pollutants for which an area is in nonattainment or maintenance status. Some potential projects may lead to benefits for one pollutant and increased emissions for another, especially when the balance involves precursors such as NO_x and VOC. States and MPOs should consult with relevant air agencies to weigh the net benefits of the project.

IX. PROGRAM ADMINISTRATION

A. Project Selection—MPO and State Responsibilities

Title 23, United States Code, protects State sovereignty in implementing the Federal-aid highway program.[57] In addition, 23 U.S.C. 145 emphasizes that Title 23 provides for a federally assisted State program. Consequently, all projects in the Federal-aid highway program, including those supported with CMAQ funds, are selected by the State or the State

[57] 23 U.S.C. 145.

in conjunction with the MPO.

To ensure that projects deemed most effective in reducing motor vehicle emissions and congestion are programmed for early implementation in the TIP, MPOs, State DOTs, and transit agencies should develop CMAQ project selection processes in accordance with the metropolitan and/or statewide planning process under 23 U.S.C. 134 and 135. The selection process should involve State and/or local transportation and air quality agencies. This selection process provides an opportunity for States and/or local agencies to present a case for the selection of eligible projects that will best use CMAQ funding to meet the requirements and advance the goals of the Clean Air Act.

The CMAQ project selection process should be transparent, in writing, and publicly available. The process should identify the agencies involved in rating proposed projects, clarify how projects are rated, and name the committee or group responsible for making the final recommendation to the MPO board or other approving body. The selection process should also clearly identify the basis for rating projects, including emissions benefits, cost-effectiveness, and any other ancillary selection factors such as congestion relief, greenhouse gas reductions, safety, system preservation, access to opportunity, sustainable development and freight, reduced SOV reliance, multimodal benefits, and others. At a minimum, projects should be identified by year and proposed funding source.

Close coordination is encouraged between the State and MPO to ensure that CMAQ funds are used appropriately and to maximize their effectiveness in meeting the CAA requirements. While the program of projects is being developed, the State or MPO should consult with FHWA and FTA to resolve any questions about eligibility. This will ensure that the projects programmed for CMAQ funding in the TIP are all eligible.

States and MPOs should fulfill this responsibility so that nonattainment and maintenance areas are able to make good-faith efforts to attain and maintain the NAAQS by the prescribed deadlines. State DOTs and MPOs should consult with State and local air quality agencies to develop an appropriate project list of CMAQ programming priorities that will have the greatest impact on air quality. In developing this list, MPOs and States should evaluate the cost-effectiveness of the projects and give priority consideration to those that will create the greatest emissions reductions for the least cost, especially in those areas designated nonattainment or maintenance for $PM_{2.5}$.[58] The MAP-21 calls out diesel retrofits as one type of cost-effective project to which priority consideration shall be given. The EPA has conducted a study of the cost-effectiveness of diesel retrofits in reducing PM, NO_x, and VOC emissions. In addition, the National Academy of Science's Transportation Research Board has evaluated the cost-effectiveness of other CMAQ eligible projects, with a focus on NO_x and HC reductions. The CMAQ Program: Assessing Ten Years of Experience[59] was completed in response to prior Federal transportation legislation.

Information on the cost-effectiveness of CMAQ-eligible projects can be used as a guidepost

[58] 23 U.S.C. 149(g)(3), as amended by Sec. 1113(b)(5), Pub. L. 112-141 (July 6, 2012).
[59] See http://www.nap.edu/catalog.php?record_id=10350.

in evaluating the different types of projects under consideration by an MPO or State. However, cost-effectiveness ultimately will depend on local conditions and project specific factors that affect emission reductions and costs. As noted earlier in this guidance, the FHWA and FTA, in consultation with EPA, are developing cost-effectiveness tables and other graphic representations of these relationships to aid States and other project sponsors in selecting the most efficient mix of CMAQ projects.

B. Federal Agency Responsibilities and Coordination

1. Eligibility Determinations

The FTA determines the eligibility of transit projects, and the FHWA determines the eligibility of all other projects. The FHWA, FTA, and EPA field offices should establish and maintain a consultation and coordination process to review CMAQ funding proposals. While the eligibility determination is not made jointly, every effort should be made to satisfy the concerns raised by the agencies' field offices. The FHWA or FTA field offices may request additional information from the State or MPO to help determine eligibility. The consultation process should provide for timely review and handling of CMAQ funding proposals. The FHWA and FTA headquarters offices are available to consult with their field offices on eligibility determinations.

2. Program Administration

The FHWA Division offices and the FTA Regional offices are responsible for administering the CMAQ program. In general, the FHWA transfers funds to FTA to administer CMAQ-funded transit projects. In cases where the FTA lacks statutory authority (e.g., school bus fleets), the FHWA will administer the transit project. For projects that involve transit and non-transit elements, such as park-and-ride lots and intermodal passenger projects, the administering agency is decided on a case-by-case basis. All other projects are administered by the FHWA.

3. Tracking Mandatory/Flexible and $PM_{2.5}$ Set-aside Funds

The FHWA's Chief Financial Officer has established accounting codes in the Fiscal Management Information System (FMIS) to track State investments of CMAQ funds in the mandatory and flexible spending areas, and the set-aside spending for the MAP-21 $PM_{2.5}$ priority. States and other sponsors are encouraged to accurately reflect these CMAQ obligations as they record project data in the FMIS or provide information that ultimately populates the system.

C. Annual Reports

States should prepare annual reports detailing how CMAQ funds have been invested. The CMAQ reporting is not only useful for the FHWA, the FTA, and the general public, but the development and maintenance of a cumulative database of all CMAQ projects by the Secretary is

required by MAP-21. In addition, more recent annual reports will be key in supporting case studies for the CMAQ Outcomes Study, a major research effort designed to gauge the impact of the program, and also required by the statute.[60] The CMAQ annual reports should be submitted through the Web-based CMAQ Tracking System.[61]

The FHWA Division offices, State DOTs, and MPOs should develop a process for entering and approving the data in a timely manner. This report should be approved by the FHWA Division office by the first day of March following the end of the previous Federal fiscal year (September 30) and cover all CMAQ obligations for that fiscal year. Thus, State DOTs and MPOs should report the data early enough that the Division office has time to review and comment on the report. The report as entered into the CMAQ Tracking System should include:

1. A list of projects funded under CMAQ, in seven main project categories:
   - *Transit:* facilities, vehicles, equipment, and related activities, operating assistance for new transit service, etc. Include all transit projects whether administered by the FTA or the FHWA.
   - *Shared Ride:* vanpool and carpool programs and parking for shared-ride services.
   - *Traffic Flow Improvements:* traffic management and control services, signalization projects, ITS projects, intersection improvements, and construction or dedication of HOV lanes.
   - *Demand Management:* trip reduction programs, transportation management plans, flexible work schedule programs, vehicle restriction programs.
   - *Pedestrian/Bicycle:* bikeways, storage facilities, promotional activities.
   - *I/M and other TCMs:* projects not covered by the above categories.
   - *STP/CMAQ:* projects funded with the flexible funds provided in those States receiving the minimum apportionment.

   For reporting purposes, obligations for all CMAQ-eligible phases (beginning with the NEPA process) should be reported for the project they support.

2. The amount of CMAQ funds obligated or deobligated for each project during the Federal fiscal year. Enter deobligations as a negative number. (Do not include Advance Construction funds, as these are not obligations of Federal CMAQ funds. Such projects should be reported later when converted to CMAQ funds.)

3. A quantitative analysis. Given the emphasis MAP-21 places on cost-effectiveness and performance measurement, quantitative assessment should be provided whenever possible. In addition, to the extent this information has been provided historically, a cost-effectiveness assessment for each reported project should be projected as well. Emissions benefits (and disbenefits) should be developed for each project from project-level analyses. Emissions estimates may be derived from EPA's MOVES model, CARB's EMFAC model, and AP-42, among others. Report

[60] Sec. 1113(c), Pub. L. 112-141 (July 6, 2012).
[61] See http://www.fhwa.dot.gov/environment/air_quality/cmaq/reporting/.

projected emissions benefits expected to occur in the first year that a project is fully operational, in kilograms reduced per day. Benefits should be reported the first time a project is entered into the system, and only then to avoid double counting of benefits. (Because funds may be obligated for a project over several years, an individual CMAQ project may show up in reports for multiple years.) Additionally, all pollutants for which the area is in nonattainment or maintenance status, regardless of which pollutant contributed to the area's weighted population for apportionment, should be addressed. Emissions benefits for deobligations or projects funded with flexible funds (STP/CMAQ) should not be entered.

4. Public-private partnerships and experimental pilot projects should be identified in the system. Transmit electronic versions of completed before-and-after studies for experimental pilot projects to the Division offices.

5. Other requested information: MPO, nonattainment/maintenance area, project description.

6. Optional information: TIP, State and/or FMIS project numbers—highly recommended. Other optional information includes: greenhouse gas emission reductions, cost-effectiveness, safety, congestion relief, and other ancillary benefits.

D. Performance Plan

The MAP-21 established a requirement in 23 U.S.C. 149(l) for a CMAQ performance plan covering MPOs that serve a TMA[62] of one million or more population and that represent a nonattainment or maintenance area. In addition, performance measures and target setting for emissions and traffic congestion reduction for the CMAQ program will be established through a rulemaking process. The CMAQ performance plan will be completed and updated biennially and will include:

1. Baseline levels for traffic congestion and on-road mobile source emissions for which the area is in nonattainment or maintenance;

2. A progress report on achievements in reaching performance targets described in 23 U.S.C. 150(d);

3. A description of the projects identified for CMAQ funding and a projection of how these projects will contribute to achieving the emission and traffic congestion reduction targets developed pursuant to 23 U.S.C. 150(d);[63] and

4. A separate report assessing the progress of the projects under the previous

[62] 23 U.S.C. 134(k).
[63] 23 U.S.C. 149(l)(1).

plan in achieving the air quality and congestion targets of the previous plan.[64]

The biennial performance plan will be submitted with the CMAQ annual report for that year. Reports will be turned in to the FHWA Division Office through the State DOT. Further guidance on FHWA's approach to performance management will be provided as the rulemaking process covering changes under MAP-21 continues.

[64] 23 U.S.C. 149(l)(2).